CONTRASTING OPPOSITE POLARITY IN GERMANIC AND ROMANCE LANGUAGES:

Verum focus and affirmative particles in native speakers and advanced L2 learners

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Contrasting opposite polarity in Germanic and Romance languages:
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Giuseppina Turco
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Promotores:

Prof. dr. Stephen C. Levinson

Prof. dr. Christine Dimroth (Universität Münster, Germany)

Prof. dr. Bettina Braun (Universität Konstanz, Germany)

Manuscriptcommissie:

Prof. dr. Carlos Gussenhoven

Prof. dr. Aafke C. J. Hulk (UvA)

Prof. dr. Giuliano Bernini (Università degli Studi di Bergamo, Italy)

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CONTENTS

GENERAL INTRODUCTION

When we speak, we constantly plan our contributions according to the current state of knowledge shared with our addressees. Communication entails a continuous enrichment of the information that is mutually shared by interlocutors (i.e., the *common ground*, e.g., Stalnaker, 1978; Lewis, 1979; Clark, Schreuder, & Buttrick, 1983), between what is implicitly assumed about the world (*presuppositions*) and what is proposed as a change to the common ground (*assertions*). Contributions added by speakers to the common ground are typically *true* but they do not have to be. Assertions are always made in relation to a specified situation (explicitly or implicitly) talked about; and it is with respect to this situation that their truth can be evaluated by speakers/listeners (Klein, 2006; 2008, among others). Hence, common ground cannot just contain true propositions but also hypothetical or untrue ones.

Beyond delivering factual informational, interlocutors develop conversation in line with their communicative needs, interests, and goals. This further dimension is referred to as common ground *management* (e.g., Sacks, Schegloff, & Jefferson, 1974; see also Krifka & Musan, 2012) and refers to how speakers conduct and facilitate the flow of their discourse. *Information structure*, as first introduced by Halliday (1967a), deals with all these aspects of human communication. This term has been extensively used in the literature to refer to how speakers present their utterances into a more informative part and a less informative part (i.e., *information packaging*, Chafe, 1974;

Firbas, 1975; Sgall, Hajičová, & Panenová, 1986) according to the interlocutors' current information state. Consider, for instance, the extract in (1) from a film-retelling:

(1) Context: there is a fire in the house of Mr. Red, Mr. Green and Mr. Blue…
   a *Mr. Red jumps out of the window.*
   b *Mr. Blue also jumps*.
   c *Mr. Green on the other hand does not jump out of the window.*
   d *Eventually he does jump.*
   (adapted from Dimroth, Andorno, Benazzo, & Verhagen, 2010: 3329)

In each utterance contained in (1) the speaker is presenting information as if s/he was replying to an underlying question like *What happened to Mr. Red, Mr. Blue and Mr. Green?* (e.g., Klein & von Stutterheim, 1987). In utterance 1a, for example, the speaker is providing the listener with information *about* an entity mentioned in the question - the *topic* (i.e., *Mr. Red*) - and a predicate saying something *about* this entity - the *comment* (i.e., *jumps out of the window*) – as first coined by Hockett (1958): topic and comment represent two basic information structure components according to which speakers tend to present information by default.

Beyond that, the utterances in (1) are endowed with a linking element, such as the finite verb *is* in utterance 1a (*Mr. Red is jumping*), which serves to establish a relation between these two units. Following Klein (1998, 2006), this element is called "assertion operator". In many languages, finiteness is the typical reflex of this linking operation: making an assertion about *Mr. Red jumping* means to produce a finite (full-fledged)

clause (e.g., *Mr. Red is jumping*). In such a clause, the function of the finite verb *is* is to establish an assertive relation between the topic and the comment and to confine the assertion, in terms of *illocutionary force*,[1] to that topic component (in particular, to a specific time span, the "topic time", Klein, 1994, 2008).

Under specific information structure conditions, speakers can find it relevant to highlight this assertive relation in their utterances. This is the case in utterance 1d compared to 1c: the assertion operator (finiteness) is separated from the lexical content of the verb, mapped onto an extra auxiliary and thus highlighted in a context where affirmative polarity constitutes changing information (e.g., *He does jump* in relation to a previous comparable utterance with negative polarity, e.g., *Mr. Green does not jump*). This issue is at the core of our case study about *polarity contrast*.

The variant shown in utterance 1d is only one out of several possibilities to express that affirmative polarity constitutes changing or contrastive information. Languages offer a variety of linguistic means that help speakers to express certain communicative functions. In the current thesis, we shall deal with cases of contrast on affirmative polarity following a comparable utterance containing a negative polarity (e.g., such as utterance 1d in relation to utterance 1c). Specifically, we investigate whether and how speakers of different languages mark polarity contrast and how second language (L2) learners deal with this particular type of information structure in their L2.

In the literature, cases of polarity contrast have been referred to with many names: *polarity focus* (e.g., Dik et al., 1981; Gussenhoven, 1983; Romero & Han, 2004), *Verum*

[1] For a definition, see, for instance, Austin (1962), Levinson (1983).

focus (Höhle, 1988, 1992), *auxiliary focus* (Hyman & Watters, 1984), *predicate/predication focus* (Güldemann, 2003) or *focus of affirmation* (Bolinger, 1983). In spite of the abundant terminology, very little empirical research has been devoted to understanding how this phenomenon is expressed across languages. The aim of this thesis is to fill in this gap by looking at how this form of contrast is encoded in those languages in which finiteness represents an explicit marker of assertion (Klein, 2006). To this purpose, we chose to investigate German and Dutch (Germanic languages), Italian and French (Romance languages).

In this thesis, we will adopt the term *affirmative polarity contrast* instead of the more current notion of Verum focus (Höhle, 1988, 1992), mainly for two reasons: first, the term Verum focus erroneously presupposes that the information part in focus highlights the truth value of the utterance with respect to a previous utterance that is false. However, as proposed in other accounts (Klein, 1998; Lohnstein & Blühdorn, 2012 for a similar interpretation), what is highlighted in an utterance like *He does jump*, in opposition to *Mr. Green does not jump*, is rather the fact that an affirmative assertive relation is established between the topic and the comment of the utterance: there is no reason to believe that when highlighting the assertion operator in utterance 1d, the speaker is claiming that the content of utterance 1c (i.e., Mr. Green's previous experience of not jumping) is false (cf. Horn, 1985; Klein, 1998, 2006). As signaled by the adverb *eventually*, the opposite claims in utterance 1c and 1d are made in relation to different time spans (i.e., topic time, Klein, 2008): the truth of one of them does not exclude the truth of the other. Second, Verum focus seems to be more commonly associated with intonational marking (cf. Höhle, 1988, 1992), thus precluding the idea that polarity

contrast can be encoded in other ways (e.g., with particles). Since the aim of this thesis is also to look at other linguistic means, the term Verum focus will be reserved for cases in which the underlying function of marking polarity contrast is encoded via intonation, and, in particular, by accenting the finite verb (cf. Höhle, 1988, 1992; Klein, 1998; Lohnstein, 2012).

This thesis is organized into two parts: a theoretical part (Part I) concerned with previous work on the encoding of information structure from a typological and an acquisitional perspective, and an empirical part (Part II), which deals with the expression of affirmative polarity contrast in Germanic (German, Dutch) and Romance languages (Italian, French) as well as in second language learner varieties.

PART I: BACKGROUND

CHAPTER 1

1 INTRODUCTION

1.1 Basic notions of information structure

As mentioned in the General introduction, information structure deals with how speakers organize their utterances into a more informative part and a less informative part, according to the interlocutors' common ground. Scholars have proposed several notions for capturing this dichotomy with little agreement on what and how many categories should be distinguished: *theme-rheme* (e.g., Firbas, 1964; Halliday, 1967b; Vallduví & Vilkuna, 1998), *topic-comment* (e.g., Chomsky, 1965; Chafe, 1976), *background-focus* (e.g., Steedman, 2000), *topic-focus* (e.g., Sgall, 1967; Büring, 1997), *given-new* (e.g., Halliday, 1967b; Sacks et al., 1974), and so on. The current chapter provides an introduction to the basic concepts of information structure that will help to understand their operationalization in the empirical part of this dissertation. More exhaustive overviews can be found, for instance, in Kruijff-Korbayová and Steedman (2003) and Krifka and Musan (2012).

Despite the variety of definitions proposed by scholars, these terms conflate two main dimensions: the first one concerns the mental representations of the discourse referents (i.e., their information status); the second dimension refers to the pragmatic functions that these referents can fulfill in an utterance. This chapter will cover both aspects in sections 1.1.1 and 1.1.2, respectively. Section 1.1.3 deals with the research topic of this dissertation: (affirmative) polarity contrast. Previous work on the linguistic marking of information structure in Germanic (German, Dutch) and Romance languages

(Italian, French) is reviewed in section 1.2, followed by the second language acquisition of information structure (section 1.3). This leads us to the specific research questions that are being addressed in this dissertation (section 1.4). Section 1.5 describes the experimental procedure and the type of data that has been collected to answer these research questions. This introduction is concluded by outlines of the individual studies presented in the remainder of the current dissertation (section 1.6).

1.1.1 Information status

Referents are described by speakers according to their *cognitive status* (e.g., Gundel, Hedberg, & Zacharski, 1993; Lambrecht, 1994), that is, whether they represent *given* or *new* information (e.g., Halliday, 1967a; Chafe, 1974, 1976) in the mental (discourse) representation of the listener. For instance, consider (2):[2]

(2) *I saw a pair of glasses at the flea market. They had a huge frame.*

In (2), *a pair of glasses* is a *new* referent the speaker introduces to the discourse. From then onwards, the speaker assumes that the listener has a mental representation (or, a "file card", Heim, 1983) of this referent, and should therefore be able to identify it any time it is mentioned in the discourse: In (2) the hearer is likely to identify the referential expression *they* as referring to the *pair of glasses*, which the speaker had just mentioned.

[2] In this example and in all subsequent ones, the referent in question is underlined.

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The interlocutors' knowledge of a certain referent has been referred to as *identifiability* of a discourse referent by theories of cognitive status of referents (Lambrecht, 1994).

Nonetheless, the cognitive state of referents can be more than given or new. For instance, in longer stretches of discourse (e.g., a narration), a referent may be represented in the listeners' mind but might not have been mentioned for a long while; also, interlocutors might have mutual knowledge of a certain referent, prior to the discourse situation, because the referent is somehow present in the extra-linguistic setting. Imagine for instance (3), contextualized in a situation where this sentence is uttered "out of the blue" by a speaker:

(3) *The key is not on the shelf. The guard took it away.*

In (3), the referent *the key* is identifiable because it refers to something that is prior to the immediate linguistic context. This is a case of an *accessible* referent (Chafe, 1987, 1994; Lambrecht, 1994). Such an example shows that interlocutors can have different levels of *activation* of a referent in their mind at a certain point in time (Prince, 1981; Chafe, 1994; Lambrecht, 1994): even though they know that a certain referent exists, this does not imply that such a referent is always at the centre of their attention. Following Chafe (1987, 1994; for experimental evidence, see also, Baumann, 2006; Baumann & Grice, 2006), the status of a referent should be described in terms of activation cost, for which the author identifies at least three types of status: a referent is new if it gets activated from a previously inactive state (i.e., when the referent is "neither focally nor peripherally active" in the listener's consciousness, Chafe, 1987: 25); accessible, if the referent

becomes active from a previously semi-active state (i.e., present in the listener's "peripheral consciousness"); given, if the referent is in the listener's "focus of consciousness".

As we shall see later, natural languages are provided with morphosyntactic and/or intonational means (e.g., pronouns, deaccentuation)[3] allowing interlocutors to mark whether referents are already available (or not) in the immediate linguistic context. In what follows, we shall mostly use the labels new and given to refer to the cognitive status of referents. Our main focus, however, lies on information structure, that is, the partitioning of information in an informative, forward-looking part and a less-informative, anchoring part.

1.1.2 Information structure

As mentioned earlier, speakers tend to package information in an utterance according to a sort of default (bipartite) structure in which one part of the utterance (e.g., *crying* in (4) below) says something *about* another part of it (e.g., *The child*, Hockett, 1958; Reinhart, 1981).

(4) *The child is crying.*

Several terms have been proposed by scholars to describe this structure (section 1.1); in this thesis we will use the terms topic and comment.

[3] The term deaccentuation refers to the lack of an accent on words that is otherwise expected to be accented.

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Topics have been defined in different ways. Beyond the prominent property of a topic to signal what an utterance is about, other scholars (Chafe, 1976; Lambrecht, 1994) have defined the topic as being the first major constituent in the clause, typically encoded by the syntactic subject. Other definitions of topic also include location and temporal information. This is, for instance, the notion of "topic situation" proposed by Klein (2008), as shown in (5):

(5) *In Bergen, it was snowing.*
(adapted from Klein, 2008: 292)

In (5), the *snowing*-event is clearly stated *about Bergen*, representing the topic situation (or, more specifically, the "topic place") about which something is said. We might as well replace *Bergen* with a temporal expression as in *At five, it was snowing.* In this case, the *snowing*-event would be confined to a particular point in time (the topic time, see General introduction). Hence, in such a view, the notion of topic assumes a more fine-grained definition in which the topic does not necessarily correspond to a person or an object but can also be identified with properties of a situation (Klein, 2008). The definition of topic situation is closer to other similar ones proposed in the literature, such as that of *frame-setting* topic (e.g., Jacobs, 2001): the *Bergen*-situation represents a sort of frame setter specifying that the information provided (i.e., *snowing*-event) is claimed to hold for this specific situation.

There is a further aspect worth pointing out in example (5). Since the *snowing*-event is clearly confined to the *Bergen*-situation, this delimitation may (implicitly or

explicitly) entail that there can be other (topic) situations (or, *alternatives*, Rooth, 1992) for which other predications might hold, as for instance in (6):

(6) *In Bergen, it was snowing. In Riva Faraldi, it was not snowing.*
(taken from Klein, 2008: 292)

In (6) the *snowing*-event applies to the *Bergen*-situation, whereas the *non-snowing* event applies to the *Riva Faraldi*-situation, which represents an alternative (topic) situation for which a different predication holds. A close description of such a relation is found in Büring's notion of *contrastive topic* (1997, 2003). In (7)[4] below, for instance, the accented *female* induces the presence of alternatives (e.g., *male pop stars*) for which other predications could be made (e.g., *wearing jeans* instead of *caftans*).

(7) Context: What did the pop stars wear?
The [*FEMALE*]$_{CT}$ *pop stars wore CAFTANS.*
(taken from Büring, 2003: 525)

The idea of alternatives leads us to other well-known information structure constructs, namely those of *focus* and *contrast*. There is a long-standing discussion on these notions; here, we will only deal with their main pragmatic uses. For a recent (critical) review, the interested reader is referred to Matić and Wedgewood (2013).

[4] Following established conventions, in all the examples reported in this thesis, subscripted T, CT, C and F stand for *topic*, *contrastive topic*, *comment* and *focus*. Capital letters indicate the presence of an accent.

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One of the most common pragmatic uses of focus is to identify the part of an answer corresponding to the *wh*-part of a potential question as, among others, defined by Halliday (1967b: 226): focus is what is "replacing the *wh*-element in a presupposed question" (e.g., A: *What did Peter buy*? - B: *Peter bought* [*cigars*]$_F$). These *wh*-questions may target one particular constituent (e.g., the syntactic subject, the verb, the syntactic object), often called *narrow focus*, but may also apply to the entire utterance (as in the question *What happened?*), often referred to as *broad focus* (e.g., Ladd, 1980; Selkirk, 1984; Lambrecht, 1994).

Beyond the systematic use of focus as the part that answers a *wh*-question, focus also refers to contrast (e.g., Halliday, 1967b; Chafe, 1976). As mentioned above, the notions of focus and contrast are very controversial and still ill-defined. Following Umbach (2004), there are scholars who treat these notions as distinct categories (e.g., Kiss, 1998; Steube, 2001), while other authors merge them into a single category (e.g., Rooth, 1992; Krifka, 1993). Further models of information structure treat contrast as an independent category that freely interacts with topic and focus (e.g., Vallduví & Vilkuna, 1998; Steedman, 2000). Here we shall briefly summarize the main arguments put forward by these different approaches.

Among those accounts treating focus and contrast as distinct categories, is Kiss's classification (1998) of focus into "identificational focus" and "information focus". According to Kiss (1998), identificational focus presents distinctive syntactic and semantic properties: it involves movement of the focused constituent into a specific position of the utterance - like, for instance, an English cleft construction such as *It was to John that I spoke* (1998: 257) - and evokes an "exhaustive" identification reading - the

focused constituent represents the only element in a set of given elements for which a certain predicate holds. Hence, in this view, identificational focus (or, contrast) implies "exhaustiveness"; exhaustiveness results in the exclusion of other potential elements, namely, no other element, apart from the focused one, makes the proposition true. Information focus, on the other hand, does not involve any sort of syntactic reordering and conveys new information.

Conversely, exponents of the "Alternative Semantics" approach (Rooth, 1992) and of the "Structured Meanings" approach (e.g., Jacobs, 1983; von Stechow, 1990; Krifka, 2001; Krifka & Musan, 2012) have aimed at a unified account of focus. In Rooth's Alternative Semantics theory (1992), the function of focus is to signal the existence of alternatives to the focus expression. For example, in a simple proposition like *Mary likes [SUE]*$_F$, the author makes a distinction between what is presupposed (*Mary likes x*) and what is asserted (i.e., "focus semantic value"): there is no true proposition of the type *Mary likes x* other than the one in which x is Sue. Rooth (1992) shows that such a focus value can be used to capture several construction types, such as contrast, implicatures or question-answer pairs. Hence, according to Rooth's view, focus is always contrastive as long as the set of alternatives is of the appropriate type (e.g., the alternatives evoked by the focused constituent *Bill* are more likely to be individuals) and the relation between the focused element and its alternatives does not necessarily imply exhaustiveness.

Yet, the idea of focus resulting from the mere existence of alternatives leaves open the question of how and through which constraints it is possible to identify the type and the amount of alternatives. By developing Rooth's idea of alternatives, so-called two-

dimensional theories of information structure (e.g., Vallduví & Vilkuna, 1998; Steedman, 2000) have treated contrastiveness as an independent feature (captured with the term *kontrast* by Vallduví and Vilkuna (1998) and focus by Steedman (2000)) that can be freely combined with components like theme and rheme (or, also, topic and comment, see section 1.1). For instance, Steedman (2000) identifies a theme-rheme dimension, which refers to how the utterance is related to the previous discourse context, and a background-focus dimension (corresponding to Halliday's given-new distinction), which distinguishes the elements in the theme and the rheme from alternatives available in the context. In this view, the rheme, which provides new information, is divided into a focus part that evokes alternatives, and a background part, which represents recoverable information. The same focus-background distinction applies to the part of the utterance representing the theme, as shown by the accented elements in example (8):

(8) Context: I know that Marcel likes the man who wrote the musical. But who does he ADMIRE?
[*Marcel ADMIRES*]$_{\text{theme}}$ [*the woman who DIRECTED the musical.*]$_{\text{rheme}}$
background focus background focus background
(taken from Steedman, 2000: 659)

Hence, two-dimensional models of information structure have tried to unify different views on focus/contrast by providing a more comprehensive account of information structure.

In the present thesis, we shall largely adopt the notions of focus/contrast derived from the presence of contextually relevant alternatives. Both terms will be used interchangeably, while the contexts investigated here will be referred to as (affirmative) polarity contrast. Our study on polarity contrast deals with utterances produced in a context in which the common ground contains a proposition that differs from the current proposition in particular ways. Following Rooth's (1992) definition of focus/contrast, it can be argued that the set of alternatives evoked by a contrast on the polarity is limited to the number of two candidates: the negative polarity and the positive polarity. In the next section this phenomenon will be discussed in more detail and will be largely framed in the account of finiteness and assertion as proposed by Klein (1998, 2006).

1.1.3 Assertion and polarity contrast

Consider the assertion (9) produced by speaker B:

(9) B: *The child WAS crying.*

In (9) speaker B not only asserts that a certain state of affairs, *crying*, applies to the entity *child*, at a given point in time and in a given place (Klein, 2008), but can also presuppose a contrastive alternative to the accented word *was* (e.g., Jackendoff, 1972; Rooth, 1992). Thus, the question arises as to which kinds of alternatives can be evoked. In this example,

one of the possible contrastive antecedents is an utterance with an opposite polarity (i.e., child *not* crying), as shown in example (10).[5]

(10) A: *The child was not crying.*
B: *(That's not true,) the child WAS crying.*

In (10), the issue discussed between the two speakers is whether *it is* or *it is not the case* that the child was crying: speaker B reacts to speaker A's statement by asserting that this is *indeed* the case. Both utterances are mutually exclusive because A's negative utterance and B's positive utterance are presumably applying to the same (topic) situation (Klein, 2008, section 1.1.2). In the literature cases like (10) are commonly referred to as polarity *correction* (e.g., Umbach, 2004). However, if we consider (11):

(11) A: *At home the child was not crying.*
B: *At SCHOOL the child WAS crying.*

the two speakers are claiming that a given state of affairs (i.e., *crying*) occurs or does not occur in relation to two different situations (i.e., the *at home*-situation vs. the *at school*-situation). As such, the two utterances in (11) are no longer mutually exclusive despite the opposite polarities. We shall refer to cases like (11) as polarity contrast (see General

[5] An accent on the finite verb can also induce other types of contrasts involving tense (e.g., past vs. present form), mood (e.g., subjunctive vs. indicative) or the semantic component of the verb when represented by a lexical verb (Bolinger, 1983; Lohnstein, 2012).

introduction), which are not necessarily implying exhaustiveness (section 1.1.2);[6] rather, following Klein (1998, 2006), an analysis of information structure should necessarily start from the basic assumption that assertions are always made in relation to a specific (spatial and/or temporal) situation. In this thesis, we shall be concerned with cases of correction, applying to the same topic situation (such as (10)), and of contrast, applying to different topic situations (such as (11)), both triggered by antecedent utterances containing an explicit negation.

Crucially, in (10) and (11), speaker B expresses his/her opposite claim by accenting the finite auxiliary verb *was*. Morphologically, a finite verb is inflected in a particular way (i.e., finiteness marking); syntactically, its position may determine the sentence type (i.e., questions vs. assertions, Klein, 1998, 2006). Beyond this surface level of representation, finiteness can also be understood as the expression of an assertion operator that establishes a particular relation in the utterance on a more abstract level of the linguistic structure (a similar view is shared by Lohnstein, 2012). More specifically, the finite verb *was* (and not the non-finite verb *crying*) is the carrier of the assertion value of the utterance and, as such, defines the relation between the topic (i.e., *the child*) and the comment (i.e., *crying*); such a linking operation expresses the "validity" of the utterance (Klein, 2006) in terms of illocutionary force: something is asserted if the speaker considers it to be valid in relation to a specific topic component (see General introduction).

[6] See also Dik et al.'s (1981) notion of "expanding" for contrast and of "replacing" for correction.

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For Germanic and Romance languages, among others, the assertion operator is inevitably linked to the finiteness property of the finite verb, inflected for tense, mood and person/number in the utterance. However, such an assertion operator is independent from the polarity of the sentence as both negative and affirmative sentences contain a finite verb. According to Klein (1998, 2006), the topic-comment relation becomes particularly evident when the finite verb is (contrastively) accented, as also shown in the German example in (12):

(12) A: *Das Kind hat nicht geweint.*
the child has NEG cried
("The child did not cry")
B: *Das Kind HAT geweint.*
the child has cried
("The child DID cry")

In the German literature cases like (12) are commonly referred to as Verum focus (e.g., Höhle, 1992; see also all contributions in Lohnstein & Blühdorn, 2012). More specifically, Höhle (1988, 1992) considers Verum focus as a phenomenon by which the semantic operator [VERUM], associated to the verb, becomes highlighted when the verb bears an accent. By accenting the verb, speakers emphasize the truth-value of the proposition. As mentioned earlier, the focus interpretation proposed by Höhle has been a matter of discussion in the German literature. Klein (1998, 2006) does not interpret the accentuation effect in terms of an opposition between *verum* vs. *falsum*. Rather, what is

highlighted is more the fact that an assertive relation holds between the topic and the comment of the utterance (see also Lohnstein, 2012 for a similar interpretation).

A similar operation can be accomplished by accented versions of special (sentence-internal) *particles*,[7] such as the Dutch particle *wel* or the German particles *doch/schon/wohl* (roughly meaning "indeed"). These particles have the role of indicating the "compatibility" (or the degree of relation) of the utterance they occur in with an earlier contextually given one (Klein, 2012), as shown in (13):

(13) A: *Simon hat Susanne nicht geheiratet.*
Simon has Susanne NEG married
("Simon did not married Susanne")
B: *Simon hat Susanne SCHON geheiratet.*
Simon has Susanne PRT married
("Simon did INDEED marry Susanne")

From the literature it is not clear, however, whether accented versions of affirmative particles and an accent on the finite verb (i.e., Verum focus) operate on the same level of meaning. As a matter of fact, beyond an assertion operator (expressed by the finite verb), a sentence always has a positive or a negative polarity (i.e., a polarity operator). While negation has to be expressed with an overt lexical or morphological

[7] Particles can also have an unaccented version that can signal other functions. These particles are commonly referred to as modal particles or *Abtönungspartikeln* ("attenuating particles", Weydt, 1969).

marker, affirmation represents the unmarked option in many languages - unless it is contrasted with negation, as in (13), and, thus, conveyed with a special lexical marker. Hence, accenting the finite verb, the element that carries the assertive relation between the utterance's comment and its topic, should not be treated on a par with cases in which the expression of polarity (i.e., negation or affirmation) is focused. While an accent on the finite verb (i.e., Verum focus) operates at the level of assertion, particles may operate at the level of polarity. Similar suggestions come from Blühdorn (2012) who maintains that even if under some circumstances both linguistic means can produce indistinguishable readings, they still operate on different levels of meaning. A support for this distinction comes from the fact that while it is possible to combine Verum focus with negation, as in the German example 14a, this seems not to be the case for affirmative particles, as in the Dutch example 14b.

(14) a. *Das Kind HAT nicht geweint.*
the child has NEG cried
("the child DID not cry")

b. **Het kind heeft WEL niet gehuild.*
the child has PRT not cried
("the child did not INDEED cry")

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What remains to be done with respect to Klein's framework and to previous proposals is to empirically test whether in German and Dutch, Verum focus and (the accented version of) particles are functionally equivalent in contexts like (10) and (11).[8] Particles of this sort have acquired different names in the literature: *polarity* particle (Sudhoff, 2012), *assertion-related* particle (Klein, 2012), among others. In this thesis, the positive polarity function of such particles is captured by the term *affirmative* particles. Furthermore, what needs to be tested with respect to Klein's proposal is whether a contrastive (affirmative) assertion through finiteness principles holds for other languages as well. In this regard, we investigate Romance languages (more specifically, Italian and French), which are claimed to have a reduced number of particles (Abraham, 1991; Dimroth et al., 2010) and less intonational freedom (e.g., Vallduví, 1991) as compared to the Germanic languages, German and Dutch. The cross-linguistic comparison is interesting since speakers of the Romance languages Italian and French avoid marking polarity contrasts when other options (e.g., topic contrasts) are available in a given discourse context, as in example (11) above (Dimroth et al., 2010).

In the next sections, we will be concerned with the options for the expression of polarity contrast available in the languages investigated here: German, Dutch, Italian, and French. Before doing so, we will provide a general overview on the linguistic encoding of information structure (with particular attention to focus marking) in these languages.

[8] See also Repp (2013) for an analysis on the interactions between negation, particles and VERUM operator.

1.2 Linguistic encoding of information structure

Languages offer a variety of linguistic means to express information structure. There are, for instance, special syntactic constructions (e.g., "dislocations" or "cleft" constructions, such as the *it*-cleft in English, see section 1.1.2) or syntactic positions designated for the expression of topic or focus (e.g., the *left-periphery*, Rizzi, 1997). Lexical means like particles represent a further strategy to mark topicality or focus, such as the particles *wa* and *ga* in Japanese (e.g., Susumu, 1973). Moreover, intonation plays an important role: it can express information structure via (placement and type of) *pitch accents* (i.e., tonal movements realized on lexically-stressed syllables) and/or through *phrasing* (i.e., the chunking of speech). For instance, accents may be used as explicit indicators of contrast: in *She bought RED glasses* (as opposite to *She bought blue glasses*), the referent *RED* may be realized with a prominent (rising-falling) accent, thus evoking a contrast with respect to its set of alternatives (e.g., *blue*, *green*, etc.), whereas the referent *glasses*, which is given in this context, may be deaccented (section 1.1.1). Deaccenting is a common - though not universal - prosodic strategy used for marking the given status of referents (e.g., Nooteboom & Terken, 1982; Terken & Nooteboom, 1987; Swerts, Krahmer, & Avesani, 2002).

Languages differ with regard to the linguistic means they choose for the expression of certain pragmatic functions: they can use some or all of these devices in different combinations (e.g., Büring, 2009). For instance, German and Dutch (defined as intonationally "plastic" languages, Vallduví, 1991) widely exploit accent distribution and deaccentuation to convey contextually relevant information; whereas some Romance languages are claimed to have a fixed prominence pattern and no deaccentuation (see, for

instance, Cruttenden, 1993; Swerts et al., 2002 for experimental evidence in Italian and Dutch; Ladd, 2008).[9] As a result of their non-plasticity, Romance languages heavily rely on word order variation to convey certain pragmatic meanings (but see, Face & D'Imperio, 2005). This general claim, however, should not be extended to all Romance languages since there are considerable differences within this language family that should be taken into account (see, for instance, Winkler & Gobbel, 2002 for a discussion).

The next sections are organized as follows: section 1.2.1 provides a brief overview of the (prosodic and syntactic) means for the encoding of focus in German and Dutch (section 1.2.1.1) and in Italian and French (section 1.2.1.2); particular attention will be devoted to the prosodic marking of focus by reviewing previous studies framed in the *Autosegmental-metrical* theory of intonation (Pierrehumbert, 1980; Beckman & Pierrehumbert, 1986, see Appendix F for a description of the basic theoretical assumptions and notational conventions), whereas particles will be discussed more specifically in section 1.2.2, which summarizes previous work on the encoding of polarity contrast in these languages.

[9] According to some authors (e.g., Vallduví, 1991; Szendrői, 2002), Romance languages like Catalan or Italian have a non-plastic prosodic pattern because the main prominence is invariantly assigned to the rightmost constituent of the utterance (see Ladd, 2008 for a discussion).

1.2.1 Linguistic encoding of focus

1.2.1.1 Germanic languages: German and Dutch

Before presenting the focus marking strategies available in German and Dutch, we provide some basic information on the word order of these languages, which are typically classified as verb-second (V2) languages.[10]

German and Dutch word order is typically described according to the topological model (see, for instance, Kathol, 2000 for a historical survey). This model captures the syntactic configuration of these languages by means of (left and right) sentence brackets and topological fields: the prefield, the middlefield and the postfield, as illustrated for the German sentence in Table 1.1.

Vorfeld ("Prefield")	*Linke Satzklammer* ("Left-bracket")	*Mittelfeld* ("Middlefield")	*Rechte Satzklammer* ("Right-bracket")	*Nachfeld* ("Postfield")
Heute	*hat*	*der Mann seiner Frau einen Blumenstrauß*	*gekauft*	*,den die Ehefrau gleich goss.*
Today	has	the man his wife a bunch of flowers	bought	which she watered immediately.

Table 1.1: An example description of word order in German according to the topological field. The sentence is translated as "Today the man bought his wife a bunch of flowers, which she watered immediately".

[10] Verb-second means that in an assertive main clause the finite verb is located in second position, implying a verb movement from VP via the Inflection (I) to the Complementizer (C) position in the syntactic representation. Rizzi (1990) makes a distinction between "full verb second" languages like German and Dutch and "residual verb second" languages like French or English. The main difference between the two is that in French and English the verb movement from I to C applies exclusively to *wh*-questions (e.g., as in the French example: *Qui a-t elle rencontré?* - "Who did she meet?", cf. Rizzi, 1996: 75). See also Hulk (1993) for a detailed analysis.

The finite verb appears between the prefield and the middlefield (in the so-called left sentence bracket), whereas the non-finite verb appears in the right sentence bracket and can optionally be followed by other constituents in postfield position. The middlefield, enclosed between the finite and the non-finite verb, can be filled with any constituent; the prefield position is occupied in cases of verb-second clauses and can be filled with all sorts of constituents as well (e.g., adverbials, subject- or object-NPs, *wh*-question items such as *wer, was*, etc.); the postfield is mainly used in spoken language for longer constituents such as subordinate clauses, heavy prepositional phrases, and so on. The distribution of constituents within and across fields depends on the interplay of diverse constraints including information structure.

In German, default rules of stress-assignment associate sentence accent to the internal argument of an utterance spoken in broad focus contexts, such as in (15) below (i.e., *Sentence Accent Assignment Rule* (SAAR), Gussenhoven, 1983; Uhmann, 1991; Gussenhoven, 1992). The sentence accent corresponds to the *nuclear* pitch accent in phonological terms (e.g., Truckenbrodt, 2012), defined as the last pitch accent occurring in an intonational phrase, usually perceived as the most prominent one (following the definition proposed by Silverman & Pierrehumbert, 1990).

(15) Context: What happens?

Manuela will BLUMEN malen.

Manuela$_{\text{-NOM.}}$ wants flower$_{\text{-ACC.PL}}$ to.paint

(“Manuela wants to paint flowers”)

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In contrastive contexts, information structure interacts with syntactically-informed sentence-accent rules in such a way that default rules can be overridden: the focused constituent (as *Manuela* in (16) below) attracts the sentence accent and given information following the focused constituent gets deaccented. Deaccentuation plays an important role for signaling the given status of postfocal constituents in German (e.g., Baumann, 2006).

(16) Context: Oliver wants to paint the flowers
MANUELA will Blumen malen.

As shown in (16), accent placement is a way to signal different information structures in German. Beyond that, intonational studies have demonstrated that nuclear contours produced in broad focus contexts and in contrastive contexts can be largely described as high-falling pitch movements, transcribed with the "medial" peak accent H* followed by a L- phrase accent[11] in GToBI (*German Tones and Break Indices*, Grice, Baumann, & Benzmüller, 2005); however, such nuclear contours differ in a number of prominence-lending features such as peak-height, tonal scaling relations or peak-alignment (Baumann, Grice, & Steindamm, 2006; Baumann, Becker, Grice, & Mücke, 2007; Féry & Kügler, 2008). For instance, the H-peak produced on a broad focused constituent is typically *downstepped* (i.e., lowered with respect to a preceding one), as shown in 17a by

[11] A phrase accent controls the pitch contour between the last (nuclear) pitch accent in an intonation phrase (IP) and the boundary tone at the end of the phrase (e.g., Ladd, 2008).

the peak on the focused constituent *Blumen* ("flowers") in relation to the preceding peak on *Manuela*, whereas the H-peak on a contrasted constituent is never downstepped (as in 17b).

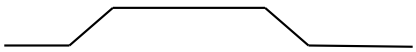
(17) a. b.

Manuela will Blumen malen. *Manuela will Blumen malen.*

(adapted from Baumann et al., 2006: 302)

In cases of an additional contrast on the sentence-initial topic, the topic is realized with a rising movement (transcribed as L*+H or as L+H*, cf. Braun, 2006; De Ruiter, 2009) and followed by (at least) one accent, leading to the realization of the so-called hat pattern contour. This pattern was originally identified by Cohen and 't Hart (1967) for describing neutral declarative sentences in Dutch; it is characterized by an initial rise (on the topic constituent), a sustained high-pitch and a final (nuclear) fall (on the focus constituent), resulting in a pitch curve that bears resemblance to a hat, such as in (18). In German this pattern typically carries a contrastive meaning (e.g., Braun & Tagliapietra, 2010):

(18) Context: What about the rest of the class? What are they going to do?



[*MANUELA*]$_T$ *will* [*BLUMEN*]$_F$ *malen*.

L*+H H* L-%

In German, contrast can also be expressed by syntactic reordering of the constituents. Within the middlefield, constituents can be scrambled[12] from their default position to carry contrastive meaning. For instance, in (19) the indirect object *einem Schüler* is dislocated from its default position and moved rightwards, after the direct object *das Buch* (e.g., Uszkoreit, 1986):

(19) *Ich habe das Buch einem SCHÜLER gegeben.*
I have the$_{-ACC}$ book$_{-ACC}$ a$_{-DAT}$ student$_{-DAT}$ given
("I gave the book to a STUDENT")

Furthermore, German allows contrasted elements to move to the prefield position and be accented (e.g., Frey, 2004, 2010), as in (20):

(20) *Ein KLEID hat Maria gekauft.*
a$_{-ACC}$ dress$_{-ACC}$ has Mary bought
("Maria bought a DRESS")
(taken from Frey, 2010: 1430)

In Dutch, stress-assignment rules are similar to those described for German. Intonation studies have shown that in broad focus contexts the internal argument of the utterance is typically realized with a high-falling contour (transcribed as H*L in ToDI,

[12] "Scrambling" is a term coined by Ross (1967) and refers to the reordering of constituents within or across clause boundaries.

Transcription of Dutch Intonation, cf. Gussenhoven, 2005; for experimental evidence, see, for instance, Hanssen, Peters, & Gussenhoven, 2008; Chen, 2009b). Contrasted constituents are also realized with a high-falling nuclear contour but present phonetically distinct properties from a broad focus nuclear contour (e.g., earlier timing of the high-peak, a steeper slope of the fall, see Hanssen et al., 2008). For instance, the illustration in (21) shows that the slope of the high-falling accent realized on *Manderen* in a contrastive context (solid line) is steeper than that of the high-falling accent realized on *Manderen* in a broad focus context (dotted line).

(21) 

We willen in MANderen blijven wonen.
"We want to stay in Manderen"
(adapted from Hanssen et al., 2008)

Contrastive topics in the prefield typically bear a rising accent (transcribed as L*H, see, for instance, van Hoof, 2003) but can also be produced with falling accents (transcribed as H*L, Chen, 2009b). As mentioned above, the hat pattern contour is common in Dutch neutral declaratives; as such, it is not necessarily interpreted as contrastive (for experimental evidence, see, Braun & Tagliapietra, 2010).

In Dutch contrast can also be expressed by using syntactic operations such as left-dislocation and scrambling (e.g., Neeleman, 1994; Neeleman & van de Koot, 2008; De Vries, 2009; Zwart, 2011).

1.2.1.2 Romance languages: Italian and French

In this section we shall describe focus-marking in Italian and French, which are commonly classified as S(ubject)-V(erb)-O(bject) languages.

In Italian, the nuclear pitch accent is by default located on the (stressed syllable of the) rightmost constituent of the utterance (e.g., Cinque, 1993; Samek-Lodovici, 2006) as shown in (22) on *Giovanni.*

(22) Context: What happened?
Maria ama GIOVANNI.
("Mary loves John")

Intonational phonology studies have demonstrated that in broad focus contexts the last constituent (e.g., *Giovanni*) is typically produced with a falling nuclear accent (transcribed as H+L*, cf. Grice, D'Imperio, Savino, & Avesani, 2005). Contrast involving a particular constituent can be marked in situ via nuclear pitch accent assignment, as in *GIOVANNI vorrebbe invitare Maria* - "JOHN would like to invite Mary" (e.g., D'Imperio, 2001; Grice, D'Imperio, et al., 2005; Bocci, 2013),[13] thus violating default rules of mapping between the main prominence and the rightmost element of the utterance. The phonological realization of a contrastive constituent differs from (regional)

[13] For previous work on topic marking in Italian see, for instance, Brunetti, D'Imperio, & Cangemi (2010) and D'Imperio & Cangemi (2011).

variety to variety.[14] For instance, in Neapolitan Italian, a contrastive constituent is transcribed with the L+H* pitch accent (D'Imperio, 2001), whereas this is transcribed as H* L-L% (i.e., with the phrase accent L- falling on the postnuclear syllable) in Florentine Italian or as H*+L L-L% (i.e., with the fall realized within the nuclear syllable) in Bari and Palermo Italian (Grice, D'Imperio, et al., 2005). Both pitch accents seem to be possible in the less explored Roman variety (Frascarelli, 2004; Sardelli, 2006). In H* L- the fall is shallower than in H*+L but there does not seem to be a functional distinction between these two accent types.[15]

Note that it is not possible to deaccent postfocal words of a syntactic phrase in Italian (Swerts et al., 2002 for experimental evidence; Ladd, 2008): deaccentuation of given referents (e.g., Schwarzschild, 1999; Féry & Samek-Lodovici, 2006) does not operate postfocally. This phenomenon has also been described as lack of "anaphoric destressing" or "contextual deaccenting" within syntactic phrases (Rooth, 1996; Ladd, 2008).[16] As a consequence, postfocal words remain accented and are realized with compressed pitch movements (i.e., flagged with a "!" symbol, Grice, D'Imperio, et al., 2005). More specifically, such constituents are realized with (compressed) *postnuclear* accents (e.g., !H+L*) and/or other prominence cues (e.g., a higher energy level, a longer

[14] The notion of Standard Italian is controversial (Lepschy & Lepschy, 1977), especially when it comes to intonation (cf. D'Imperio, 2002; Grice, D'Imperio, et al., 2005). Hence, a description of the tonal inventory of this language needs to be specified in relation to each regional variety.
[15] More specifically, the H* tone is associated with an intermediate phrase (L-) and the H*+L tone is associated with a higher level of phrasing, an intonational phrase.
[16] However, Ladd (2008: 233) claims that Italian allows accent shifts in cases of metalinguistic corrections (e.g., *Non ho detto CASA bianca, ho detto COSA bianca* - "I didn't say white HOUSE, I said white THING"). Moreover, Italian permits deaccenting of full phrases or clauses (Grice, D'Imperio, et al., 2005).

duration of the post-focal stressed syllables, see, for instance, Bocci & Avesani, 2011; Bocci, 2013). Given the presence of postnuclear accents, the definition of nuclear pitch accent as being the last one of an intonational phrase seems to be untenable in Italian. In Grice et al.'s (2005) description of Italian intonation, nuclear pitch accents are flagged with an *n* letter (i.e., H*n) to distinguish them from postnuclear accents. However, despite the realization of these postnuclear accents, the most salient and prominent pitch accent is the one on the focused word (i.e., the nuclear pitch accent, which is "the rightmost fully-fledged pitch accent in the focused constituent", Grice, D'Imperio, et al., 2005: 380).

In addition to prosodic means, there are different syntactic operations that Italian speakers can employ for encoding contrast. According to the "cartographic" approach (e.g., Benincà, Salvi, & Frison, 1988; Cinque, 1990; Rizzi, 1997), focused elements are fronted to the left-periphery of the sentence, which represents the location for several displacement processes.[17] The operation of focus fronting to the left-periphery seems to be limited to contrastive contexts,[18] as in (23).

[17] But see Samek-Lodovici (2006) for a different approach to leftward focus movement in Italian.
[18] The left-periphery also hosts *wh*-elements and left dislocated topics resumed by clitic.

(23) Context: Filomena wants to call the virologist
L'UROLOGO Filomena vuole chiamare.
The urologist-$_{ACC}$ Filomena-$_{NOM}$ wants to.call
("Filomena wants to call the UROLOGIST")
(taken from Bocci & Avesani, 2006: 12)

whereas the right-periphery hosts a focus projection for non-contrastive narrow focus (e.g., *Ho visto GIANNA* - "I saw GIANNA" as a reply to *Who did you see?*, Belletti, 1999; Bocci, 2013).

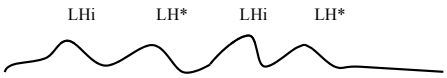
Finally, cleft sentences such as *È Mario che vuole partire e non Gianni* - "It is Mario who wants to leave and not Gianni" represent a further syntactic strategy for focus marking in Italian (e.g., Benincà et al., 1988; Berretta, 1995). However, a recent corpus study (Roggia, 2008) reveals that clefts are not very frequent in informal situations, with faster and less carefully articulated speech.

In French, the sentence accent is assigned to the rightmost constituent of the utterance (e.g., Di Cristo, 1999a; Rossi, 1999; Winkler & Gobbel, 2002) Typically, in broad focus contexts, an utterance is parsed into a sequence of rising movements demarcating the left and the right-ends of each phrasal unit (i.e., the *accentual phrase* in Jun and Fougeron's model of French intonation 2000, 2002);[19] a phrasal unit is minimally composed of a content word with (or without) associated functional words (e.g., *le motocycliste* - "the motorcyclist", in example (24) below). These rising movements are

[19] This prosodic unit is known by many names, see Lacheret-Dujour and Beaugendre (1999) for a review.

markers of the so-called initial accents (transcribed as Hi, according to Jun and Fougeron (2000, 2002)) - optionally realized on one of the first syllables of the content word - and of the so-called final accents (H*)[20] - obligatorily realized on the last full-syllable of the phrase-final word as in (24) (subscripted AP stands for accentual phrase).

(24)



[*le motocycliste*]$_{AP}$ [*a réveillé*]$_{AP}$ [*les enfants*]$_{AP.}$

The motorcyclist has woken up the children

("The motorcyclist woke up the children")

The status of both initial and final accent is highly debated in the French literature: both accents are either treated as purely demarcative tones (cf. Féry, 2001) or as pitch accents (e.g., Post, 2000), or only the final accent is treated as a pitch accent (Jun & Fougeron, 2002; Welby, 2006).[21] According to the latter, phrasing is the most exploited strategy for focus marking in French, fulfilling the same function that is typically attributed to pitch accents in other languages.

[20] The initial accent and the final accent are also called "secondary stress" or "secondary accent" and "primary stress" or "primary accent" respectively (see, for instance, Jun & Fougeron, 2000 and references therein).

[21] Unlike German, Dutch and Italian and many other languages, it is not clear whether French stress or accent should be specified at a word or at a phrasal level (see, for instance, Di Cristo, 1999a for a discussion). Because accentuation and phrasal boundaries always coincide in French, some authors (e.g., Pulgram, 1965) deny the existence of lexical stress in this language (but see Dell, 1984). In some approaches to French intonation (e.g., Jun & Fougeron, 2000, 2002), French stress is a property of the phrase: its location is fixed at a word level but its realization depends on the position of the word in a phrase (e.g., Grammont, 1934; Delattre, 1939).

It has, however, been shown that in French focus can be marked in situ by a focal accent (i.e., *Hf*, described as a "large peak", Jun & Fougeron, 2000: 223). This focal accent seems to be treated as a further tonal event, which replaces the initial accent (as shown in (25) below, on the first syllable of the word *réveillé*), the final accent, or both (e.g., Hirst & Di Cristo, 1998; Jun & Fougeron, 2000; Dohen & Loevenbruck, 2004). The phonological status of the focal accent is controversial in the literature since this tonal feature does not seem to belong to an inventory of pitch accents.

(25) LHi LH* Hf LH*

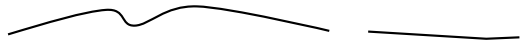
[*le motocycliste*]$_{AP}$ [*a réveillé*]$_{AP}$ [*les enfants.*]$_{AP}$

Postfocal elements can be deaccented but not *dephrased*, that is, the sequence is tonally flat but still preserves durational cues to phrase structure (e.g., Di Cristo, 1998; Jun & Fougeron, 2000; Dohen & Loevenbruck, 2004), though deaccentuation seems not to be obligatory in French (cf. Di Cristo & Jankowski, 1999; see, Rasier & Hiligsmann, 2007 for empirical evidence on the absence of deaccentuation within noun phrases).

Syntactically speaking, French favors the use of cleft sentences for focus marking,[22] as shown in (26):

[22] In French, cleft structures can also have other focus readings other than a contrastive function (e.g., Rialland, Doetjes, & Rebuschi, 2002; Dufter, 2009).

(26) Context: Did you catch the 7:00 p.m. train?



[*(Non), c'est celui de vingt et une heure*]$_{ip}$ [*que j'ai pris*]$_{ip}$

H* H* L% L%

("(No), It is the 9:00 p.m. train that I caught")

(taken from Rialland et al., 2002: 596)

In (26) the clefted constituent is phrased apart from the rest of the utterance and is realized with a final boundary tone (i.e., *intonème conclusif*, Rossi, 1999; Rialland et al., 2002). The high frequency of occurrence of clefts in this language has been attested by recent corpus-based studies (Roggia, 2008; Dufter, 2009). Dufter (2009), for instance, reports that in French clefting strategies are preferred (accounting for almost 60% of the cases) to a significantly higher extent than German (only 8.5%) and Italian (39.4%, see Roggia, 2008 for similar findings in Italian and French).

1.2.2 Linguistic encoding of polarity contrast

Previous linguistic studies suggest that in Germanic and Romance languages polarity contrast contexts can be expressed by a number of linguistic means: Verum focus (e.g., Höhle, 1988, 1992; Lohnstein, 2012), affirmative particles (e.g., Dimroth et al., 2010) or syntactic operations (e.g., *Verum Focus Fronting*, Leonetti & Escandell-Vidal, 2009). As said earlier, the extent to which these linguistic markings are employed may change from language to language.

Some authors have speculated about the reasons behind these typological differences (Abraham, 1991; see also, Waltereit, 2001). For instance, Abraham (1991) argues that the inventory of sentence-internal particles is particularly rich in those languages whose syntactic configuration is organized in terms of (pre-, middle- and post-) fields (e.g., German and Dutch, see section 1.2.1.1). In particular, the middlefield represents "a prominent locus for linguistic elements expressing illocutive meanings" (Abraham, 1991: 7). In Romance languages, discourse and illocutive meanings are mostly encoded by adverbials, which are typically located at the left-periphery of the sentence.

Besides this general understanding, other lines of research (see, for instance, Carroll, von Stutterheim, & Nüse, 2004 for a discussion)[23] have pointed out that the linguistic means available in a language "push" speakers to adopt a particular perspective on the way information is organized at a discourse level, with the consequence that speakers highlight certain aspects of an event more than other ones. In a recent cross-linguistic investigation on Germanic (German, Dutch) and Romance languages (Italian, French), Dimroth et al. (2010) elicited film-retellings including various information structure configurations from speakers of these languages. The authors found that in contexts in which both the topic and the polarity were contrasted, French and Italian speakers preferred to explicitly mark topic contrasts, whereas German and Dutch speakers highlighted the contrast on the polarity. In (27) this difference is exemplified by the specific syntactic construction *essere l'unico a* in the example (a) spoken by an Italian

[23] This line of research is framed within the "thinking for speaking" approach (Slobin, 1996).

native and by the particle *wel* in (b) spoken by a Dutch native, both elicited in the same context situation:

(27) Context: Mr. Red and Mr. Green do not jump out of the window

a. *Il signor Blu è l' unico a buttarsi.*
the mister blue is the only.one to to.jump
("Mr. Blue is the only one to jump")

b. *Meneer Blauw springt wel uit het raam.*
mister blue jumps PRT out the window
("Mr. Blue jumps indeed out of the window")

(taken from Dimroth et al., 2010: 3342 - 3337)

Given these cross-linguistic differences, the authors concluded that Germanic languages are more *assertion-oriented* than Romance languages. Furthermore, the study showed that, in addition to polarity markings like particles, Verum focus was never produced for polarity contrast purposes in Italian and in French.

Further support against an assertion-orientation in Italian and in French comes from the lack of *do*-support, as shown in a comparative corpus-based study on preposed infinitive structures by Bernini (2009). In such constructions, Germanic languages tend to separate finiteness from the lexical content of the verb and map the former on an independent carrier. This is not an option in Italian and French, as shown by the comparison between the English example in (28) and the Italian example in (29).

(28) *Kill, she did.*

("as for killing, this is claimed/asserted as true")

(29) *Mangiare, mangio poco.*

eat$_{INF}$ I.eat a.little

("I eat not very much")

(taken from Bernini, 2009: 110-108)

These typological differences raise the question of whether the realization of polarity contrast may partly depend on the word status of the finite verb (i.e., full lexical or an auxiliary/copula verb). As a matter of fact, studies on focus marking in these languages (section 1.2.1.2) have mostly investigated the intonation of focused lexical referents (i.e., content words like nouns or verbs); hence, our understanding of the intonational realization of focused functional elements such as auxiliaries is still very limited.

In the next three subsections we provide a general survey of previous studies on polarity contrast marking in German and Dutch (section 1.2.2.1) and in Italian and French (section 1.2.2.2). Section 1.2.2.3 offers a brief survey of studies framed in the tenets of the Prosodic Phonology theory (e.g., Nespor & Vogel, 1986; Selkirk, 1995; Truckenbrodt, 1999; Truckenbrodt, 2007) that have described the unique phonological status of function words (e.g., auxiliary/copula verbs), with respect to that of content words (e.g., lexical verbs).

1.2.2.1 German and Dutch

The German literature is full of descriptions on Verum focus (e.g., Höhle, 1992; Klein, 2006; see all contributions in Lohnstein & Blühdorn, 2012; Repp, 2013). As mentioned above (section 1.1.3), the syntactic implementation of a [VERUM] operator and its relation to other types of foci are under discussion. The vivid debate covering this phenomenon goes along with a nearly complete absence of empirical evidence. A few occurrences of Verum focus in free productions by German speakers are reported in Dimroth et al.'s study (2010): on the basis of impressionistic analyses, the authors describe the presence of a contrastive intonation on the finite verb in contexts of topic and polarity contrast (see also, Grice, Lohnstein, Röhr, Baumann, & Dewald, 2012 for perception evidence).

A similar function may be achieved by producing accented (sentence-internal) affirmative particles such as *schon/wohl/doch* (e.g., Van Valin, 1975; Dimroth et al., 2010; Blühdorn, 2012; Klein, 2012), as shown in (30):

(30) A: *Das Kind hat nicht geweint.*
the child has NEG cried
("The child did not cry")
B: *Das Kind hat SCHON geweint.*
the child has PRT cried
("The child did INDEED cry")

The specific meaning contribution of these particles is still under debate (e.g., Foolen, 2006; Hogeweg, Ramachers, & Wottrich, 2011). In the film-retelling task study by

Dimroth et al. (2010), these particles were produced far less frequently than Verum focus by German speakers, despite the fact that both means are grammatically possible (cf. Blühdorn, 2012, see section 1.1.3).

In Dutch there is not so much linguistic and psycholinguistic evidence concerning the use of Verum focus. Gussenhoven (1983; 1999) suggests that an utterance with an accent on the finite verb evokes a different pragmatic meaning than an identical utterance with an accented *wel*. Compare for instance the two mini-dialogues in (31) and (32):

(31) Context: Stop squirting water all over the house. I TOLD you.
A: *Het huis STAAT niet in brand.*
the house stands NEG in fire
("The house is not on fire")
B: *Het huis STAAT in brand.*
the house stands in fire
("The house is ON fire")

(32) Context: The house ISn't on fire.
A: *Het huis staat NIET in brand.*
the house stands NEG in fire
("The house is not on fire")
B: *Het huis staat WEL in brand.*
the house stands PRT in fire
("The house IS on fire")
(taken from Gussenhoven, 1983: 406-407)

Gussenhoven assumes that while in (31) the role of speaker B's statement is to retract a wrong presupposition made by speaker A from the common ground; in (32) speaker B's role is to correct or reject speaker A's contribution.[24] This suggests that, in comparison to German, Verum focus has a more restricted function in Dutch and might not be felicitous in correction contexts like the B-utterance in (32). Rather, in cases of polarity correction (example (33)) and of polarity contrast (example (34)) Dutch speakers produce the affirmative particle *wel* (among others, e.g., *toch*), as previously suggested (Hogeweg et al., 2011; Sudhoff, 2012) and showed (Hogeweg, 2009; Dimroth et al., 2010):

(33) Polarity correction

A: *Hij komt niet.*

He comes NEG

("Peter does not come")

B: *Hij komt WEL.*

He comes PRT

("Peter does INDEED come")

(adapted from Hogeweg et al., 2011)

[24] Cases like the B-utterances in (31) and (32) are called "counter-presuppositional" and "counter-assertive" respectively (Watters, 1979; Dik et al., 1981). Given the distinction between the assertion level and the polarity level introduced in section 1.1.3, we refrain from using the term counter-assertive.

(34) Polarity contrast

Context: There is a house on fire.

Meneer Rood durft niet te springen. Blauw is WEL gesprongen want het
mister red dares neg to to.jump Blue is PRT jumped because the
vuur stond inmiddels ook al in zijn kamer.
fire stood meanwhile also already in his room
("Mr. Red does not dare to jump. Blue is indeed jumping because there is already fire in his room")
(taken from the "Finite Story Corpus", Dimroth et al., 2010)

Beyond that, previous studies have suggested that accented particles can be realized with different levels of acoustic prominence according to different degrees of explicitness of a preceding denial. For instance, on the basis of a corpus-based study on *wel* in corrective, contrastive and a variety of other contexts, Hogeweg (2009) shows that there is always an explicit or implicit negation in the preceding context and comes to the conclusion that "the stronger the negation in the context, the stronger *wel* has to be to *undo* [emphasis added] that negation" (2009: 53). Yet, this idea of prominence as an indicator of the extent of "undoing" a context negation might be appealing for corrective contexts but not for contrastive contexts, in which it is not the function of the particle to undo the negation, but rather to signal the contrastive relation between the affirmative statement and the preceding negative one. The different functions of the affirmative particle become evident when one considers monologues instead of dialogues. For instance, the speaker in (34) is not contradicting or negating an earlier claim. Rather, both

claims are compatible with one another, as long as the speaker talks about two different topic situations (here: two topic entities, Mister Red and Mister Blue, see section 1.1.3). The contrast between the utterances in (34) (i.e., Mister Red is not jumping, Mister Blue is jumping) could in principle be left unmarked by speakers, and in Dimroth et al.'s study (2010) this was indeed the case in roughly half of the contexts. Other speakers, instead, draw attention to the potential contrast by using affirmative particles (or other linguistic means), without, however, "undoing" earlier claims.

To sum up, according to the studies revised above, it is possible that in cases of polarity contrast and correction both languages might opt for formally different - though functionally equivalent - linguistic means (i.e., Verum focus in German and affirmative particles in Dutch). Hence, more empirical evidence from comparative contexts is necessary to get a better understanding of how polarity contrast/correction is encoded in these languages. Furthermore, quantitative data and comparative analysis are required to support previous generalizations (Hogeweg, 2009) on the different degrees of prosodic prominence of the affirmative particles (and/or of other linguistic means) in relation to type of context.

1.2.2.2 Italian and French

What we know about the encoding of polarity contrast in Italian and French is still very limited. The few studies we are aware of suggest a similar picture for both languages. In this section we talk about previous work on polarity contrast in both languages simultaneously.

There are no empirical studies attesting the presence of Verum focus in Italian and in French. There are, however, a few studies on the intonational marking of polarity contrast in other Romance languages like Spanish (Escandell-Vidal, 2011). In such contexts, Spanish speakers do not seem to realize an accent on the finite verb (see also, Vallduví & Engdahl, 1996 for similar observations in Catalan); rather, they lengthen the stressed syllable of the internal argument of the verb. Dimroth et al. (2010), on the other hand, observed that with complex verb constructions (e.g., auxiliary plus non-finite verb), one French speaker and one Italian speaker expressed polarity contrast by producing a contrastive accent on the non-finite verb (e.g., *Monsieur Bleu a VU l'incendie*, lit. Mr. Blue has SEEN the fire, "Mr. Blue DID see the fire").

Concerning the use of lexical means, it has been claimed that Italian uses cleft constructions with a left-fronted polarity such as *sì che* (Bernini, 1995) and French uses the left-fronted particle *si* (Kerbrat-Orecchioni, 2001), as shown in (35) and (36):

(35) A: *Io non bevo.*
I NEG drink
("I don't drink")
B: *Sì che bevi.*
PRT that you.drink
("You do drink")
(taken from Bernini, 1995: 184)

(36) A*: Il ne fait pas beau.*
It NEG does NEG nice
("The weather is not nice")
B*: Si (il fait beau)*
PRT (it does nice)
("It IS nice")
(taken from Kerbrat-Orecchioni, 2001: 102)

These particles seem to have a different status from (the accented version of) the Germanic particles (section 1.2.2.1). For instance, a comparison between the Italian example *Io credo di sì* (or the French *Je crois que oui/si*) and the German example *Ich glaube schon* (meaning "I think so") clearly shows that the Romance particles can be embedded in complement clauses, thereby acting as "pro-sentences" (i.e., sharing some of the syntactic and semantic properties of the sentence, Bernini, 1995). However, it is still unclear on which level of meaning these Romance particles operate as well as their relation with finiteness. The extent to which Italian and French speakers use these constructions and the contexts in which these are employed is a matter of empirical investigations. For instance, in an Italian corpus study, Brunetti (2009) did not find any of these structures. Furthermore, all the examples reported for both languages represent cases of polarity correction, whereas the use of the Italian *sì che* and of the French *si* is not attested in those contexts with contrast on both the topic and the polarity (Dimroth et al., 2010). Rather, under these circumstances, Italian and French speakers seem to use sentence-initial adverbs like *invece* and *par contre* (both adverbs roughly meaning "on

the other hand", Dimroth et al., 2010), which appear to express a general form of contrast.

Concerning the use of particles located in sentence-internal position, to the best of our knowledge, there is only one study on Italian (Coniglio, 2008) in which it is argued that the particle *sì* can also be placed sentence-internally, after the finite verb (e.g., *Gianni ha SÌ detto che sarebbe venuto*, "Gianni did say he would come", Coniglio, 2008: 121). Similar meaning contributions are also expressed by sentence-internal intensifiers such as the Italian *proprio* (e.g., De Cesare, 2002) and the French *bien*, roughly meaning "really", "certainly". However, these intensifiers were only rarely found in Dimroth et al.'s study (2010). Hence, we do not know whether (and if so, how exactly) the use and distribution of such linguistic means is affected by pragmatic and/or regional factors in these languages.

To sum up, Verum focus is not attested in Italian and in French. Rather these languages are equipped with left-fronted particles (i.e., *sì che* and *si*), whose use seems to be limited to polarity corrections, according to the examples reported above. Sentence-internal particles (i.e., the use of the Italian *sì* in sentence-internal position) and other devices (e.g., *proprio, bien*) are also described in both languages, though we do not know whether their meaning contribution is similar to that of the Germanic affirmative particles. It is an open question whether and how often Italian and French speakers use these linguistic means.

1.2.2.3 Content words and function words

As mentioned above, polarity contrast can be encoded by accenting functional (finite) elements like auxiliaries and copula (i.e., Verum focus), the carriers of the assertion (section 1.1.3); in this section we provide a summary of previous studies on the prosodic status of function words (e.g., Selkirk, 1995).

Generative studies on the syntax-phonology interface (e.g., Nespor & Vogel, 1986; Selkirk, 1995; Truckenbrodt, 1999; Truckenbrodt, 2007) have mainly built their theories and mapping constraints on the basis of content words, regarded as inherently accentable words (e.g., Chomsky & Halle, 1968): prosodic constraints such as "Stress-XP" (i.e., each lexically-headed XP must contain a phrasal stress), "Wrap-XP" (i.e., each lexically-headed XP is contained inside a phonological phrase) as well as alignment constraints (i.e., aligning the right boundary of every phonological/intonational phrase with its head) apply to content words, but not to function words (i.e., the "Principle of Categorical Invisibility of Function Words", Selkirk, 1984; or, the "Lexical Category Condition", Truckenbrodt, 1999). Therefore, it appears that the prosodic status of functional categories is different from that of lexical/content words and particularly complex. This complexity seems to derive from the fact that function words can surface either in a stressed, strong form (e.g., *him* realized in strong form as [hîm]), if focused or appearing in phrase-final position, or in a stressless, weak form (e.g., *him* realized without onset as [m≤]) if non-focused or appearing in non-phrase-final position. The vast majority of function words with weak forms are monosyllabic. Typically, in a sequence containing a monosyllabic auxiliary followed by a non-finite verb and an internal argument DP (e.g., $[[\text{AUX}]\ [\text{NON-FINITE}]_{V}\ [\text{DP}]]_{VP}$), the auxiliary is integrated into the

prosodic structure at the level of the phonological phrase (φ), leading to the following prosodic structure: $[(fnc)\ (lex)_{\omega}]_{\varphi}$. Hence, under such circumstances a non-phrase-final and monosyllabic function word cannot form a prosodic constituent on its own and therefore cannot receive an independent pitch accent (Selkirk, 1995). By contrast, content words always appear in their strong form and, as such, can form independent phonological words (or prosodic words - ω, e.g., Selkirk, 1995; Booij, 1995; Peperkamp, 1996).

There are conditions, however, in which function words can be prosodic words on their own. One of these is focus (Selkirk, 1995). In general, it is assumed that focus promotes prosodic word formation, and this holds for function words too, at least in some languages (e.g., Wennerstrom, 1993 for English; Hall, 1999 for German; Zec, 2005 for Serbian). When focused, a function word is assigned a pitch accent (i.e., via "Association of Pitch Accent", Selkirk, 1995 and references therein), which is responsible for the strong form of the function word.

It is still unknown whether prosodic-word formation for focused auxiliary verbs holds for Italian and French. This aspect will be further explored in this thesis by looking at whether polarity contrast is marked in the same way in utterances with lexical verbs and with auxiliary and copula verbs.

1.3 Information structure in second language acquisition

As competent communicators and language users of the native language (L1), adult learners of a second language (L2) are already equipped with a certain functional knowledge. In their L1 they know how to adapt their contributions according to the

discourse context and which linguistic means to use for the expression of certain information structure distinctions (i.e., given-new, topic-comment, etc., see section 1.1). Assuming that information structure constructs like topic, focus or contrast were universal, the task of the L2 learners would be to acquire new expressions only. However, it might well be that information structure categories are not equally relevant for common ground management in all languages. As a matter of fact, in some languages, certain specific information structure distinctions are not expressed at all (cf. Matić & Wedgwood, 2013).

As shown in several studies on the L2 encoding of information structure (e.g., von Stutterheim & Nüse, 2003; von Stutterheim & Lambert, 2005; Carroll & Lambert, 2006), the grammar of a language provides speakers with linguistic means that make it easier to encode certain information structure distinctions over others. This implies that L2 acquisition is more than just arranging grammatically correct sentences in a longer piece of discourse. Rather, learning a language means being able to arrange and "re-conceptualize" discourse information according to the organizational principles of the target language (von Stutterheim, 2003). There is a great deal of evidence showing that despite the successful attainment of the L2 grammar, advanced or near-native learners still tend to use the L2 linguistic means for building up a discourse that follows the L1 patterns of information flow (i.e., "discourse accent", e.g., von Stutterheim, 2003). On the basis of previous work reporting typological differences on the encoding of polarity contrast in Germanic and Romance languages (Dimroth et al., 2010), we investigated the implications of such differences for L2 acquisition (see Chapter 4).

CHAPTER 1

The impact of information structure on the acquisition of the L2 linguistic means has only recently attracted the attention of researchers. In particular, studies on this field have looked at whether learners are able to adapt their utterances according to their interlocutors' state of knowledge and whether and when they start using target-like forms (e.g., particles, intonation, word order, etc.) for the expression of pragmatic functions (e.g., Klein & Perdue, 1992); whether information organizational principles are still affected by the speakers' native language in ultimate attainment (e.g., von Stutterheim & Nüse, 2003) and whether these principles are mapped onto the native-like morphosyntactic means (e.g., Sorace, 2004; Lozano, 2006). Different lines of research (e.g., the "functionalist" approach, e.g., Klein & Perdue, 1992; the "concept-oriented" approach, e.g., von Stutterheim, 2003; the "Interface Hypothesis" theory, e.g., Sorace, 2004) have addressed these issues from different angles and perspectives. The last part of this Introduction is organized as follows: Section 1.3.1 comprises previous work on the role played by information structure at early stages of the L2 acquisition; section 1.3.2 provides a survey of studies dealing with the L2 encoding of information structure, with particular attention devoted to the advanced learner varieties.

1.3.1 Information structure in elementary learner varieties

Most of the work dealing with information structure at the early stages of L2 acquisition is based on analyses of untutored learner productions elicited in naturalistic

communicative settings [25] (Klein & Perdue, 1992). The main purpose of these investigations is to gain a deeper insight into the functional aspects of the acquisition process and their relationship with the structural/formal means of a language. Within such a perspective, a learner variety is not seen as a system "deviating" from the target language but as a communicative system determined by its own set of organizational principles: "errors" made by learners are part of the learning process and not wrong imitations of the target language. In particular, according to Klein and Perdue (1989; 1992; 1997), all learners (despite their L1 background) go through a stage of *non-finite* utterance organization (i.e., the "Basic Variety"), characterized by the presence of uninflected verb forms. The Basic Variety is described as simple and efficient for the attainment of basic communicative functions and as a sort of universal and language-neutral system partly independent from learners' native and target languages.

To understand how learners attempt to communicate when only few resources are available, researchers have paid particular attention to the structure of the Basic Variety. At this stage all learners adhere to three basic principles regulating utterance structure: a syntactic principle, where the basic word order is structured according to an NP1-V-NP2[26] sequence; a semantic principle, where the controller of the action determines which NP occurs in preverbal or postverbal position (the so-called Controller First Constraint); and a pragmatic principle by which the pragmatic function of topic is

[25] Most of the studies carried out within this approach are based on interviews between the learner, with no prior knowledge of the target language, and the experimenter. These investigations were supported by the European Science Foundation project on "Second Language Acquisition by Adult Immigrants" (Perdue, 1993).
[26] The two noun phrases (NP1 and NP2) stand for the two arguments of the V(erb).

expressed first in the utterance and focus last ("Focus Last Constraint", Klein & Perdue, 1992). An example of utterance-organization according to these three principles is given in (37), spoken by a Punjabi learner of English:

(37) Context: What did the girl do?
B: [*girl*]$_{T}$ *stealing* [*bread.*]$_{F}$
(taken from Klein & Perdue, 1992: 70)

In the B utterance, *girl* represents the topic, the controller of the event, and the syntactic subject at the same time: pragmatic factors match with semantic and syntactic factors. However, in other context conditions (e.g., in cases of focalization), these principles might no longer match; as a result, one of them has to override the others. For instance, when replying to the question in (38), the pragmatic principle (i.e., putting the focus last) is either ranked higher (i.e., B1-utterance in (38)) than the semantic and the syntactic principles or lower than them, in which case focus may occur early and be realized with an accent (as in B2-utterance in (38)):

(38) Context: Who stole the bread?
B1: *stealing bread* [*girl.*]$_{F}$
B2: [*GIRL*]$_{F}$ *stealing bread.*

Communicative conflicts of this sort push learners to further acquisition (Klein & Perdue, 1997).

Hence, before target-like rules are acquired, learners tend to arrange words by relying on very general information structure principles. These elementary ordering principles have also been attested in utterances containing negation or assertive particles, among others[27] (e.g., Dietrich & Grommes, 1998; Benazzo & Giuliano, 1998; Bernini, 2000; Andorno, 2008). For instance, Bernini (2000) and Andorno (2008) show that in pragmatically marked contexts, such as polarity contrast, L2 Italian basic learners tend to locate *no* or *sì* in final position, after the topic, like in (39), according to the pragmatic principle of focus last:

(39) a. [*gettoni*]$_T$ [*no*]$_F$
chips PRT
("As for chips, no (I don't use them)")
(taken from Bernini, 2000: 424)
b. [*televisione*]$_T$ [*sì*]$_F$
television PRT
("As for television, yes (I did watch it)")
(taken from Andorno, 2008: 186)

Similar strategies have been observed in other early learner varieties like, for instance, in L2 French (*ah moi no* - "I do not (drive a car)", Benazzo & Giuliano, 1998) or in L2

[27] A great deal of evidence comes from other studies on negation, adverbials (e.g., Benazzo, Perdue, & Giuliano, 2002; Benazzo, 2003) and intonation (Chen, 2009a). Mentioning all these studies here would fall beyond the scope of the present thesis.

German (*Mein Mann (h)aber de Auto, ich niks* - "My husband owns a car, I don't", Dietrich & Grommes, 1998). In addition, learners have been shown to encode the distinction between focus, expressed by particles, and a preceding contrastive topic (e.g., *televisione* in 39b above) by using clear intonational cues. Andorno (2008), for instance, analyzed cases like (39) in L2 Italian and showed that contrastive topics were typically realized with a rising contour, whereas the following negative or affirmative particle are realized with a falling contour.

If right from the start of the acquisition process learners are able to communicate on the basis of commonly shared principles regulating information structure, what happens next? Will it be easy for advanced learners to integrate language-specific information structure principles with more complex linguistic structures? As a matter of fact, in a stage following the Basic Variety system, learners will experience other difficulties: beyond the utterance, they will have to acquire not only how information is encoded but which information is selected and how it is distributed in a target-like discourse (e.g, on which point of a certain event native speakers of the target language focalize their attention). As studies have shown, advanced learners mostly rely on the principles they know from their L1. This issue will be addressed in the next section.

1.3.2 The L2 acquisition of language-specific means for the expression of information structure

Researchers largely agree upon the fact that a native-like proficiency is hard to achieve; however, they disagree on the reasons accounting for why this is so. Here we will revise

the main points of their arguments by presenting previous work on the encoding of information structure by advanced learners.

For proponents of the Interface Hypothesis approach (section 1.3), learners' (pragmatically) infelicitous uses of focus structures are a clear indication of pragmatic "deficit" (Lozano, 2006, among others). For instance, a few studies framed in this theory (e.g., Hertel, 2003; Sorace, 2004; Lozano, 2006) have paid attention to the acquisition of intransitive constructions with unaccusative and unergative verb types (e.g., a verb-subject order with unaccusative verbs: *Vino la policía,* "the police arrived" as reply to *What happened?*; a subject-verb order with unergative verbs: *Una mujer gritó*, "A woman shouted" as reply to *What happened?*). Lozano (2006), for instance, compared acceptability judgments by Greek and English learners of L2 Spanish and by Spanish natives on intransitive constructions realized in broad focus contexts (cf. examples with unaccusative and unergative verbs in brackets above) and in narrow focus context (e.g., verb-[subject]$_F$ order with both verb types: *Vino* [*la policía*]$_F$ "The police arrived" as a reply to *Who arrived last night at the party?* - *Gritó* [*una mujer*]$_F$ "A woman shouted" as a reply to *Who shouted last night in the street?*). Results showed that learners' acceptability judgments on word orders were target-like in broad focus but not in narrow focus condition, in which learners accepted both word orders indistinctly over the predominant pattern realized by natives (i.e., the verb-[subject]$_F$ order). In support of the Interface Hypothesis, the author concluded that even if learners achieved a native-like mastery of the syntax (i.e., the so-called narrow syntax), their random acceptability of both word orders in narrow focus condition was a clear indication that they did not know how to map information structure with syntax. For this approach, the interaction between

different modules of the linguistic competence (syntax and discourse-pragmatics) involves a much more complex computation and is therefore very hard, if not impossible, to acquire (cf. Sorace, 2004).

Nonetheless, it is hard to imagine how utterances can be shaped without information structure (given the studies talked about in section 1.3.1): as a matter of fact, all utterances have a syntax-pragmatic interface, including the ones uttered in a broad-focus context. For some scholars, it is not so obvious whether learners' deviances from the target language should be interpreted in terms of a pragmatic deficit or as the result of a high processing load, often due to the unclear input of the target language (see, for instance, Roberts, Gullberg, & Indefrey, 2008; Domínguez & Arche, 2008). In many cases, when native speakers' preferences for certain form-to-function mappings are not easily detectable in the available input, learners might need to resort to other strategies, such as those available in their L1. In a study comparing the morphosyntactic constituents occurring in the Swedish and German prefield (section 1.2), Bohnacker and Rosen (2008) found that the type of information native speakers of these languages "preferred" to fill in the prefield was very different: Swedish speakers showed a stronger preference than Germans to produce subject pronouns and expletives. More importantly, adult advanced Swedish learners of German were found to follow the information structural patterns of their L1. Hence, the study showed that even at higher levels of proficiency, learners can have a hard time with the encoding of information structure in their L2: form-to-function mappings available in the native language input are not always black-and-white ("grammatical" vs. "ungrammatical") and learners have to deduce the preferred linguistic patterns used by natives in certain contexts. The acquisition of these language-specific

patterns is not an easy task (e.g., Carroll, Murcia-Serra, Watorek, & Bendiscioli, 2000; Carroll & von Stutterheim, 2003) and might partly explain why it is hard to achieve a full native-like proficiency (cf. von Stutterheim, 2003).

The role played by L1 transfer is also evident when looking at how advanced L2 speakers attempt to organize and encode information at a discourse-level (and not only at an utterance-level). Cross-linguistic and acquisitional studies framed in the concept-oriented approach (e.g., Carroll, von Stutterheim, & Klein, 2003; von Stutterheim & Nüse, 2003; von Stutterheim, 2003; Carroll & Lambert, 2006)[28] have shown that, when faced with complex verbal tasks (e.g., film-retellings, descriptions), advanced learners' productions are still characterized by a discourse accent, despite their apparent full mastery of the sentence-level grammar. According to these studies, advanced learners fail to acquire the basic principles underlying the organization of information in their L2 together with the grammatical structures that encode them. Even if linguistic forms are fully mastered, their functions are not target-like. A good case in point is the study by von Stutterheim and Nüse (2003) on the encoding of events by English and German native speakers. Participants were asked to watch a series of short video clips displaying events and to report what they saw. The authors found that English speakers tended to describe the "ongoingness" (the progression) of an event (see in 40a, i.e., *rolling*), whereas for German speakers it was more important to mention the "endpoint" of the event (i.e., *auf den Boden* shown in 40b). Thus, event verbalization (e.g., ongoingness or endpoint) is language-specific (see also, von Stutterheim, 2003; Carroll & Lambert, 2006):

[28] For an overview of these studies see also Robinson (2013).

(40) a. *the tin is rolling off the table.*

b. *eine Dose rollt vom Küchentisch auf den Boden.*
a tin rolls from.the kitchen.table on the floor
("a tin rolls off the kitchen table onto the floor")
(taken from von Stutterheim, 2003: 198)

These examples show that language-specificity not only affects how information is organized for verbalization but also which information needs to be verbalized.

Cross-linguistic differences in organization and selection principles can have interesting implications for L2 acquisition. For instance, the same task performed with advanced English speakers of German showed that learners did not mention the endpoints in their L2 event descriptions, as in (41), a pattern that is in line with the organizational principles of their L1. Compared to the German native utterance in 40b, this clearly shows the difference with respect to the target language.

(41) *eine Dose rollt vom Küchentisch.*
a tin rolls from.the kitchen.table
("a tin rolls off the kitchen table")
(taken from von Stutterheim, 2003: 198)

As underlined by the authors, the task for learners is to discover that mentioning certain components of a situation represents the preferred pattern for verbalization in the target

language (e.g., the frequent mentions of the endpoint of an event in German), and that this has consequences for the appropriate encoding of such a pattern.

1.4 Research questions

As seen above, the literature offers only a fragmented picture of the expression of (affirmative) polarity contrast. First of all, we do not know whether German and Dutch speakers use affirmative particles and Verum focus interchangeably. Even less is known about how polarity contrast is encoded in French and Italian. Generally speaking, previous studies suggest (Abraham, 1991) and show (Dimroth et al., 2010) that Germanic languages are equipped with a rich set of assertion and polarity marking options (i.e., Verum focus and affirmative particles). These linguistic means push Germanic speakers to draw the interlocutor's attention to the change of polarity. Conversely, while marking polarity contrast seems almost obligatory and the default option for Germanic speakers, Romance speakers tend not to highlight the contrast on the assertion and the polarity operators probably because they do not find it equally relevant for purposes of common ground management (see General introduction).

Furthermore, if it is the case that these cross-linguistic differences exist, what are their implications for second language acquisition? The literature on second language acquisition of information structure has shown that, even at higher stages of acquisition, learners have a hard time acquiring the discourse organizational principles of the target language (section 1.3.2). The aim of the current thesis is to empirically investigate these issues from a typological and an acquisitional perspective. In particular, we asked:

1 Do German and Dutch, typologically close languages, employ the same linguistic means when marking polarity contrast? In other words, is the linguistic encoding of polarity contrast predictable from the similar grammatical structure of these languages? These research questions will be pursued in Chapter 2 of this thesis.
2 How is polarity contrast on prosodically weak function elements (i.e., auxiliary finite verbs) intonationally realized? Because of the different status of function words and its cross-linguistic variation, this question will be addressed using data from German and French, two languages with different tonal grammar systems. Compared to German, do French speakers produce Verum focus on auxiliary finite verbs? This issue will be explored in Chapter 3.
3 Can advanced Dutch and German learners of Italian acquire how polarity contrast is linguistically encoded in the target language or will they transfer information structure principles from their L1? To test this hypothesis, we first investigate whether polarity contrast is a relevant pragmatic function for common ground management in Italian and how it is encoded. These research questions will be tested in Chapter 4.

1.5 Experimental procedures

The key studies test how polarity contrast is expressed by Germanic (German, Dutch) and Romance (Italian, French) native speakers and by advanced learners. To give an overview, the following sections describe the general rationale behind the design of the study; further details on particular aspects of the experiments are added in the respective chapters.

CHAPTER 1

The first experiment is a picture-difference task. This task was designed to elicit cases of contrast in a setting where claims with opposite polarity do not exclude each other because they refer to two different topic situations (operationalized in two pictures). This protocol was performed with native speakers of the four languages tested here and with advanced Dutch and German learners of Italian (Chapters 2, 3 and 4 of this thesis).

The second experiment is a picture-matching task. This task was specifically designed for the elicitation of corrections: claims with opposite polarity are mutually exclusive because they refer to the same topic situation (operationalized in one picture). In line with the research question 1 formulated above, this study was performed with German and Dutch native speakers to test the specific meaning contribution of Verum focus and/or affirmative particles and different degrees of prominence (section 1.2.2.1) in relation to polarity contrast and correction contexts (Chapter 2 of this thesis).

1.5.1 Picture-difference task: "The Polarity-Switch Dialogue"

For the elicitation of polarity contrast utterances, we designed a picture-difference task, "The Polarity-Switch Dialogue". This task elicits picture comparisons in the form of a dialogue-game between a confederate speaker and the participant.

The structure of the dialogue-game is based on a three-step schema: a "baseline" picture, accessible to both the confederate and the participant, in which a situation is illustrated (e.g., a child tearing a banknote); a "negation" picture, in which the opposite event is depicted (e.g., the child is not tearing the banknote), only accessible to the confederate; an "affirmation" picture that is similar to the baseline picture (e.g., the child

is tearing the banknote), only accessible to the participant. The role of the baseline picture is to contextualize the use of the negative description given by the confederate speaker.

This procedure allowed us to elicit polarity contrast mini-dialogues in a contrastive setting where the context negation utterance (provided by the confederate: e.g., *In my picture the child is not tearing the banknote*) and the affirmative utterance (spoken by the participant: e.g., *In my picture the child is tearing the banknote*) result to be compatible because they relate to different topic situations (i.e., two different pictures, Klein, 2008, section 1.1.3).

Finally, by providing context negation utterances, the task allowed us to elicit target utterances with the same word order but with a change on the polarity of the utterance. An example triplet of pictures is shown in Figure 1.1 with the English translation.

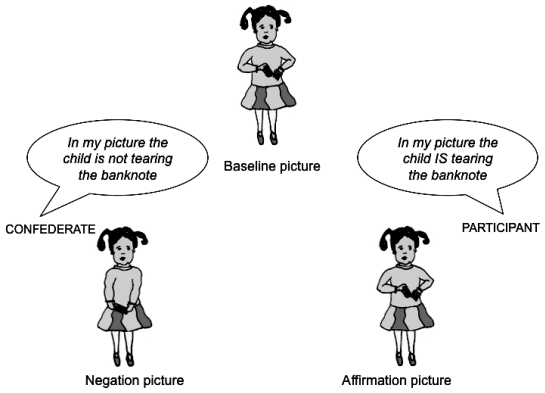


Figure 1.1: Example of picture-difference task protocol for the elicitation of polarity contrast utterances.

As far as the material is concerned, we used the same pictures across the four tested languages (German, Dutch, Italian and French) in most of the cases.[29] The whole experiment comprised 32 polarity-switch trials (i.e., with a contrastive polarity along with a contrastive topic, e.g., *In my picture* …), 32 non-polarity switch trials (i.e., focus on the whole predicate), and 50 filler trials (i.e., focus on other constituents, such as on the subject, the object and other trials in which it was the participant to produce negated utterances). The 32 non-polarity switch trials (containing a change in the action performed by the entity) acted as controls to test up to what extent certain linguistic means are specific to utterances elicited in the polarity-switch trials.

In line with our research question (section 1.4) concerning the comparison of full (lexical) and light (auxiliary and copula) verbs, the 32 polarity-switch trials comprised 12 illustrated ongoing actions encoded by transitive verbs inflected in simple-present tense ("lexical-items", henceforth), 12 depicted completed actions ("auxiliary-items") encoded by telic and transitive verbs (e.g., Verkuyl, 1972; Givón, 2001), eight trials in which pictures depicted different states (e.g., emotional states) encoded by a copula verb ("copula-items"). These three types of verb items were created in order to address the question of whether it made a difference for the intonational marking of polarity contrast when the finite verb, the carrier of the assertion (Klein, 1998, 2006), was a full or a light verb: in full/lexical verbs the semantic component is merged with the assertion

[29] When the event depicted on the picture could not be encoded as a transitive sentence in one of the four languages, we had to replace that picture with another one.

component, compared with auxiliary and copula/light verbs, in which these components are not merged (cf. Bernini, 2009).

For the four languages tested here intonational analyses were performed by adopting a ToBI-style (*Tones and Breaks Indices*) annotation scheme (Silverman et al., 1992; Beckman & Ayers, 1997) based on the Autosegmental-metrical theory of intonation (section 1.2.1). This model has been adapted to several languages (Jun, 2005; Ladd, 2008) and, in particular, to German (e.g., GToBI, Grice, Baumann, et al., 2005), Dutch (ToDI, Gussenhoven, 2005), French (e.g., Jun & Fougeron, 2000, 2002) and Italian (ToBIt, Avesani, 1995; Grice, D'Imperio, et al., 2005); furthermore, it has also been successfully applied to second language learner varieties (see, for instance, Mennen, 2004, 2007). As such, this system offers the advantage of a uniform cross-linguistic comparison.

The task procedure was the same for all native speaker and learner groups. The baseline pictures were displayed on an IBM screen, the individual pictures on two e-books, one for the confederate speaker and one for the participant. The two interlocutors could not see each other's pictures. Each picture described a single event. In polarity-switch trials, the confederate described the negation picture in comparison to the baseline picture. The participant then had to describe the affirmation picture in comparison to the confederate's description of the negation picture. In non-polarity contrast trials (i.e., with a focus on the whole predicate), the procedure was the same but the pictures showed two different actions performed by the same entity.

The confederate speaker had the first turn in all the mini-dialogue trials: in the polarity-switch trials, s/he could provide the negation context so to cue the participant to

produce polarity contrast structures. There were no time constraints. Furthermore, in the instructions, participants were told that their productions would later be used for another experiment in which somebody else would have to match the corresponding pictures to their descriptions. In this way, speakers could be indirectly encouraged to spell out the difference in a full single utterance, across all trials. This procedure allowed us to test whether and in which part of the utterance speakers produced particles and perform a more detailed intonation analysis (e.g., on postfocal noun phrases).

There was one native language confederate speaker for each language: a female speaker of Standard German (twenty-six years old); a male speaker of Standard Dutch (twenty-three years old); a male French Parisian confederate speaker (twenty-three years old); a female Italian confederate speaker (twenty-four years old) from Rome. Given that the intonation system of Italian is significantly affected by regional differences (section 1.2.1.2), we concentrated our investigation on the Italian variety spoken in Rome, a less explored regional variety compared to other ones (e.g., Neapolitan Italian, see for instance, D'Imperio, 2001; Cangemi, 2012). Finally, all the confederate speakers were instructed beforehand to keep eye-contact (after having produced their utterance) and trained on the intonation contours to use. With this procedure they could produce the same intonation patterns naturally for all speakers (see Appendix A for a list of the polarity-switch negation utterances spoken by the confederate speaker of each language).

Focus was manipulated as a within-subjects factor. Two lists were created with a pseudo-randomized order of the trials, separating the target items by at least two filler items. Both lists started with a filler trial. Participants were assigned randomly to one of

the two lists. They were instructed with a short video-clip tutorial in the native language and familiarized with the task in a short warm-up session consisting of four trials.

All sessions were sound-recorded using a Roland Edirol R-09 24bit digital wave/MP3 recorder and two Sennheiser ME40 phantom microphones (one for the confederate and one for the participant), which were linked to a six channel audio mixer (Alesis 6FX). The microphones were placed at approximately 30 cm distance from the speakers. For the simultaneous display of the pictures on the three screens, computers were connected via (W)LAN to a 3COM-LAN Switch in a client/server configuration. The productions were directly digitized on a PC with a sampling rate of 44.1kHz (16 Bit). The whole session, comprising 114 trials, lasted approximately 20 minutes.

1.5.2 Picture-matching task

A picture-matching task was designed for the elicitation of polarity correction utterances (section 1.1.3).

This task did not include a confederate speaker but pre-recorded audio stimuli matching or not matching with events depicted on pictures. In the mismatching conditions, the description of the audio-recorded sentence did not correspond to what was illustrated on the picture (e.g., picture illustrating a man washing a car – audio-recorded sentence: *The man does not wash the car*, see Figure 1.2 below). The mismatching condition allowed us to elicit cases of polarity correction: the context negation utterance (provided by the audio stimulus) and the affirmative utterance (spoken by the participant) are referring to the same topic situation such that both utterances are mutually exclusive (section 1.1.3). In the matching condition, containing fillers in which the audio matched

the visual display, participants were not supposed to react verbally but just to press the enter button for passing onto the next picture.

Concerning the material, the picture-matching task comprised 32 polarity-switch trials (i.e., focus on the polarity with no contrastive topic, e.g., The man washes the car) and 64 filler trials: 32 with a mismatching verb (e.g., picture illustrating a man driving a car – audio-recorded sentence: *The man washes the car*) and 32 matching trials (see above). Of the 32 polarity-switch trials, 12 were lexical-items, 12 auxiliary-items, 8 copula-items. In these polarity-switch trials, the respective picture was presented together with a negated description of the event and participants hence corrected the proposition.

The pre-recorded stimuli were recorded in a sound-booth cabin by a German native speaker (thirty years old) and by a Dutch native speaker (twenty-four years old), respectively. All the audio-recorded context utterances contained a pitch-accented negation particle (i.e., *NIET* for Dutch, *NICHT* for German; see Appendix B for a list of the recorded audio stimuli of the polarity-switch trials). Figure 1.2 shows an example of this task with the English translation.

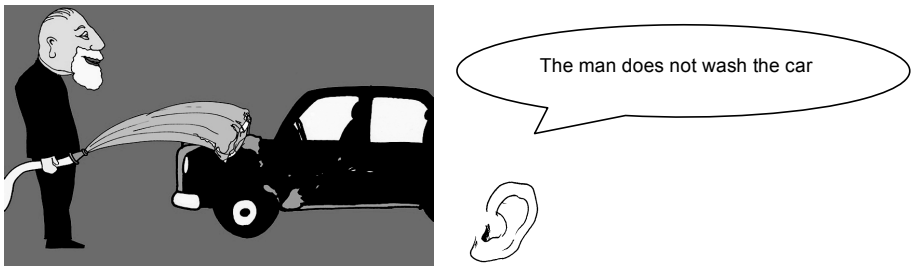


Figure 1.2: Example of picture-matching task protocol with mismatching visual and auditory information.

As for the procedure, participants were seated in front of an e-book reader in which only one picture was displayed and accompanied by an audio-recorded sentence. Participants first saw the picture illustrating an event (e.g., a man washing a car, Figure 1.2). After 2000 milliseconds, they heard a sentence that did or did not match the pictured event. They had to correct anytime they encountered a mismatch trial. The visual and the verbal stimuli were presented using the Presentation software (version 14.9, http://www.neurobs.com/).

Two experimental lists were created with a pseudo-randomized order of the trials (separating two trials with the same condition by at least two other trials). Participants were assigned randomly to one of the two lists. Before starting the task, they were familiarized in a warm-up session consisting of four trials.

All sessions were sound-recorded using a Roland Edirol R-09 24bit digital wave/MP3 recorder and a Sennheiser ME40 phantom microphone. The microphone was placed at approximately 30 cm distance from the speakers. The productions were directly digitized on a PC with a sampling rate of 44.1kHz (16 Bit). The whole session was comprised of 96 trials and lasted approximately 10 minutes.

1.6 Outline of the empirical investigation

The data collected in the course of these experiments is subsequently analyzed in the four languages and in the learner varieties. In the following, we will briefly outline how the studies in the present thesis are designed to address the issues raised in section 1.4 above.

In Chapter 2 we investigate how German and Dutch, two closely related languages, encode a shift from a negative to a positive polarity in two context conditions,

when contrasting the polarity relative to a different topic situation (e.g., *In my picture the man washes the car* following after *In my picture the man does not wash the car*; see section 1.1.3) and when correcting the polarity (e.g., *The man washes the car* following after *The man does not wash the car*). To this end, we perform both experiments – the picture-difference task and the picture-matching task – with German and Dutch native speakers. On the basis of previous work (section 1.2.2.1), we test whether German and Dutch produce affirmative particles and/or Verum focus in the two context conditions and if so, the specific meaning contribution of these linguistic means across both context conditions. If German and Dutch speakers overtly produce such linguistic means instead of leaving polarity contrast unmarked, this will lend support to the idea that the pragmatic function of (affirmative) polarity contrast is particularly relevant for common ground management in these languages (cf. Dimroth et al., 2010). Moreover, if both languages encode contrast and correction on the polarity by employing different linguistic means (i.e., affirmative particles and Verum focus), this will reveal interesting facts about the functional equivalence of particles and intonation (Schubiger, 1965). Finally, largely following previous proposals (e.g., Hogeweg, 2009), we will make a comparative analysis between polarity contrast and polarity correction utterances to test different levels of prosodic prominence in relation to type of context.

On the basis of previous studies (Dimroth et al., 2010) showing differences on polarity contrast (section 1.2.2) between Germanic and Romance languages and on the peculiar prosodic status of function words, in Chapter 3 we narrow the investigation down on Verum focus in German and French. Following previous accounts on assertion and finiteness and intonational studies on focus marking in German, we hypothesize that

German speakers produce Verum focus as a high-falling nuclear contour (i.e., H* followed by a low phrase tone L-) on the finite verb, the carrier of the assertion (section 1.1.3). We then ask whether a similar representation ought to be possible in French. Pragmatically speaking, both languages seem to differ in matter of assertion-orientation, as suggested by Dimroth et al. (2010). The interface between information structure and the prosodic-syntactic properties of these languages also differs in many respects (section 1.2.1). Hence, by concentrating the intonational analysis on auxiliary-items elicited with the picture-difference task procedure, we test whether pragmatic factors such as Verum focus license the presence of a focal accent on the phonologically weak, but functionally strong monosyllabic auxiliaries (section 1.2.2.3). The cross-linguistic comparison on a task where opposite claims are not mutually exclusive (i.e., the picture-difference task, section 1.4) can inform us on whether the functional importance attributed to finite elements (or, at a more abstract level of linguistic representation, to the assertion operator) in German holds for French too (cf. Klein, 1998, 2006; Bernini, 2009; Dimroth et al., 2010).

Finally, in Chapter 4 we investigate effects of typological differences on the relevance and the encoding of polarity contrast by advanced German and Dutch learners of Italian. As seen above, previous studies have shown that in free (monologue) productions Italian speakers prefer to mark contrasts on other information structure units (i.e., topic) than the polarity (section 1.2.2). In the present investigation, we test whether this holds true when the experimental setup explicitly encourages speakers to draw their interlocutors' attention to the switch of polarity in the context of a dialogue. If it turns out that in Italian polarity contrast is expressed more rarely and inconsistently than in

Germanic languages, it will be interesting to see how German and Dutch learners of Italian cope with this input. On the basis of previous studies on the L2 acquisition of information structure (section 1.3), in a second experiment we test whether advanced L2 learners transfer the relevance of polarity contrast from their L1 by overt marking this function in their L2 and whether, in doing so, they recruit the target-like linguistic means.

PART II: EMPIRICAL STUDIES

CHAPTER 2

2 WHEN CONTRASTING POLARITY, THE DUTCH USE PARTICLES, GERMANS INTONATION[30]

2.1 Introduction

In this chapter we investigate the use of intonation and particles to contrast an utterance's polarity; the study compares German and Dutch to address the question of whether these two (typologically close) languages employ the same linguistic means in contexts of polarity contrast and correction (see section 1.1.3), as the B-utterances of (the German) examples (42) and (43):

(42) Polarity contrast

A: *Auf meinem Bild hat das Kind nicht geweint.*
In my picture has the child NEG cried
("In my picture the child did not cry")

B1: *Auf meinem Bild HAT das Kind geweint.*
In my picture has the child cried
("In my picture the child DID cry")

[30] A version of this chapter has appeared as Turco, G., Braun, B., Dimroth, C. (2013) "When contrasting polarity, the Dutch use particles, Germans intonation." *Journal of Pragmatics*. Advanced online publication: 28 October 2013, doi: 10.1016/j.pragma.2013.09.020.

B2: *Auf meinem Bild hat das Kind SCHON/WOHL geweint.*
In my picture has the child PRT cried
("In my picture the child did INDEED cry")

(43) Polarity correction

A: *Das Kind hat nicht geweint.*
the girl has NEG cried
("The child did not cry")

B1: *Das Kind HAT geweint.*
the child has cried
("The child DID cry")

B2: *Das Kind hat SCHON/WOHL geweint.*
the child has PRT cried
("The child did INDEED cry")

In example (42), speakers A and B assert that similar descriptive properties (i.e., a child having cried) apply or do not apply with respect to different picture-situations (topic situation, in Klein's (2008) terms, section 1.1.2). If the topic is new or contrastive, the claims with negative and positive polarity do not exclude each other. On the other hand, in example (43) the two speakers' claims are referring to the same topic situation (i.e., there is no contrastive topic), hence they are mutually exclusive (section 1.1.3).

The cross-linguistic comparison of German and Dutch polarity contrast marking is interesting as both languages are considered assertion-oriented (Dimroth et al., 2010,

section 1.2.2): Speakers of such languages tend to overtly mark the contrast between negative and affirmative assertions, whereas speakers of Romance languages, for instance, usually highlight the contrast between other information structure units (e.g., the topics) in the same contexts.

Despite the similarity between German and Dutch in matter of assertion-orientation, there seem to be differences when it comes to expressing the pragmatic function of contrast on the affirmative polarity. Apparently, the use of (accented) affirmative particles in such a context is more widely acknowledged for Dutch than for German, whereas German speakers tend to produce Verum focus in the same context (section 1.2.2). For the Dutch particle *wel*, Sudhoff (2012: 105) even assumes that "focus on this particle is in fact an instance of Verum focus", thereby pointing to the existence of a functional equivalence between particles and intonation across the two languages. However, to date there is only very little comparative experimental evidence to lend direct support to these language-specific preferences in marking polarity contrast. Furthermore, in a corpus-based study, Hogeweg (2009) shows that the presence of an implicit or an explicit negation in the context utterance can trigger different levels of prosodic prominence of the particle *wel* (section 1.2.2.1); however, no quantitative data is reported by the author in relation to the different uses and to the prosodic saliency of *wel*. In this chapter we aim to fill this gap. In particular, we investigate whether such cross-linguistic differences in polarity marking also hold in more interactive situations (dialogues) than the monologues elicited in Dimroth et al.'s film-retelling study (2010) as well as the prosodic properties of the linguistic means produced across contexts (polarity contrast vs. polarity correction).

CHAPTER 2

This chapter is organized as follows: Section 2.2 provides more details about the experimental procedures described in 1.5. Section 2.3 presents the data analyses on the encoding of polarity contrast and polarity correction in each language. In the final section we turn to the discussion of the results.

2.2 Experiments: Picture-difference task and Picture-matching task

In this chapter we compare polarity contrast utterances (example (42)) with polarity correction utterances (example (43)) that were elicited with the picture-difference and the picture-matching task described in section 1.5.

2.2.1 Participants

The German group comprised 14 monolingual speakers (3 male and 11 female, average age = 23.7, *SD* = 2.3), who were students at the University of Heidelberg (Germany). They originated from different parts of Germany but all spoke Standard German. For the Dutch group, 14 monolingual speakers (2 male and 12 female, average age = 21.6, *SD* = 2.1) were recorded. They were all students at the Radboud University Nijmegen (The Netherlands) and they all spoke Standard Dutch. None of the participants had a reported history of speech/language impairment or other developmental deficits. All participants received a small fee for their participation.

2.2.2 Materials

The materials are the same as described in section 1.5. To keep participants engaged across both tasks, we used slightly different pictures. However, the types of actions illustrated were similar across tasks (e.g., "washing a shirt" in the polarity contrast task, "washing a car" in the polarity correction task).

2.2.3 Procedure

The procedure is the same as described in section 1.5. Context negation utterances (uttered by the confederate speakers in the first task and prerecorded in form of audio stimulus in the second task) are listed in Appendices A and B.

All sessions took place in quiet experiment rooms: the German group was recorded at the University of Heidelberg (Germany), the Dutch group was recorded at the Max Planck Institute for Psycholinguistics in Nijmegen (The Netherlands). All participants first took part in the picture-difference task and then in the picture-matching task; in-between they were engaged in the accomplishment of other unrelated tasks (e.g., film-retelling, filling in a background questionnaire). The whole experimental session lasted on average 45 minutes.

2.3 Data selection

Both datasets consisted of 448 polarity contrast utterances and 448 polarity correction utterances (i.e., 32 trials x 14 speakers for each language group = 448). In the Dutch dataset, we had to discard 106 utterances (55 utterances in the polarity contrast and 51

utterances in the polarity correction), mostly because speakers used elliptical structures, other verbs, or did not interpret the picture as intended and therefore gave unexpected responses. In the German dataset, a total of 192 utterances had to be discarded (111 utterances of the polarity contrast, 81 utterances of the polarity correction). Table 2.1 shows the number of polarity contrast and polarity correction utterances left for the analyses.

Context	Dutch	German
Polarity contrast	393	337
Polarity correction	397	367

Table 2.1: Number of utterances analyzed in polarity contrast and polarity correction contexts in Dutch and German.

We coded the utterances at a word and syllable level. The intonational analyses were performed using GToBI for German (Grice, D'Imperio, et al., 2005) and ToDI for Dutch (Gussenhoven, 2005, section 1.5). All statistical analyses were conducted with the R software package (2012).

In what follows we will present the analyses of the linguistic means (i.e., affirmative particles and/or Verum focus) used in each language and compare the degrees of prominence across context conditions (i.e., polarity contrast and correction). Due to the presence of two context conditions and of different types of linguistic markings, we found it clearer to first present the results for each language separately and then perform statistic analyses on possible cross-linguistic effects on the linguistic means produced in

both contexts. Furthermore, since the type of verb (i.e., lexical-items, auxiliary-items, copula-items, section 1.5) did not have a main effect (all *p*-values > .8) and no interaction (all *p*-values > .3) with other factors (i.e., language and condition),[31] it will not be considered further.

2.4 Results

2.4.1 Dutch

We analyzed the use of Verum focus, affirmative particles, other realizations (e.g., an accent on the non-finite verb in the auxiliary-items or an additional, prenuclear accent on the finite verb in the lexical-items and in the copula-items, preceding the nuclear accent on the object noun and on the adjective respectively, "others", henceforth) and no marking comprising cases without particles and with a nuclear pitch accent on the object noun (i.e., the default position, section 1.2.1.1, "unmarked", henceforth). Two speakers were excluded from this analysis as they did not mark the polarity correction at all, in none of the 32 trials, and hence did not appear to take the task seriously anymore. The averaged distribution of linguistic means across contexts for 12 of the 14 speakers is illustrated in Figure 2.1:[32]

[31] This result was supported by a logistic regression analysis (e.g., Baayen, 2008) with LINGUISTIC MEANS (the ones shown in Figures 2.1 and 2.5) as function of VERB TYPE (lexical-items, auxiliary-items, copula-items), LANGUAGE (Dutch, German) and CONDITION (polarity contrast, polarity condition).

[32] The absolute frequency values of the results illustrated in Figure 2.1 and in all subsequent figures of the current chapter are reported in Appendix C.

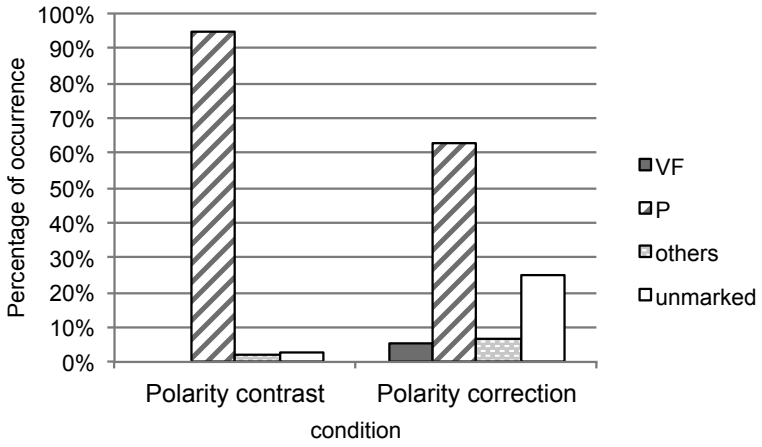


Figure 2.1: The averaged distribution in % (over speakers) of Verum focus (VF), affirmative particles (P), other realizations (others) and unmarked cases produced in polarity contrast and in polarity correction by Dutch speakers.

Figure 2.1 shows that in polarity contrast Dutch speakers realized Verum focus in none of the cases against 5.4% of the cases in polarity correction. Instead, they produced the affirmative particle *wel* far more often than the other linguistic means.[33] Surprisingly, there was a high proportion of unmarked cases in the polarity correction condition. To corroborate the observed differences, we ran a multinomial logistic regression analysis (Bates & Sarkar, 2007; Jaeger, 2008) with LINGUISTIC MEANS (the ones illustrated in

[33] Note that particles were never produced in the trials without polarity-switch (section 1.5).

Figure 2.1; the reference category was set to the category unmarked) as a function of CONDITION (polarity contrast, polarity correction). The analysis revealed that overall, there were significantly more affirmative particles (ß = 3.47, *SE* = 0.32, $p < .0001$), significantly less Verum focus productions (ß = -2.30, *SE* = 1.04, $p < .05$).[34] Furthermore, compared to the polarity contrast condition, there were significantly less affirmative particles (ß = -2.42, *SE* = 0.34, $p < .0001$) in the polarity correction, whereas there was no effect of condition on the frequency of Verum focus (all *p*-values > .4); a marginal effect was found on the frequency of the category others (ß = -0.96, *SE* = 0.52, $p = .06$).

According to the literature, the affirmative particle is usually accented (e.g., Hogeweg, 2009; Sudhoff, 2012, section 1.2.2.1). We performed an acoustic analysis to corroborate this prediction. A production of *wel* was classified as accented if it sounded prominent and was accompanied by a prominence-lending *f0*-movement; unaccented *wel* were not pitch-accented. Twenty-five cases of sentence-final *wel* realized with audible were excluded (19 occurrences in polarity contrast and 6 in polarity correction, accounting for 4.8% of the data), because the creaky voice made it impossible to reliably determine whether they were accented or not. Figure 2.2 shows the average percentages of accented vs. unaccented *wel* in the two contexts.

[34] Since logistic regression analyses cannot be calculated if there are no instances in a given condition, we changed one instance of affirmative particle to a Verum focus in polarity contrast contexts (see also, Braun & Chen, 2010 for a similar procedure).

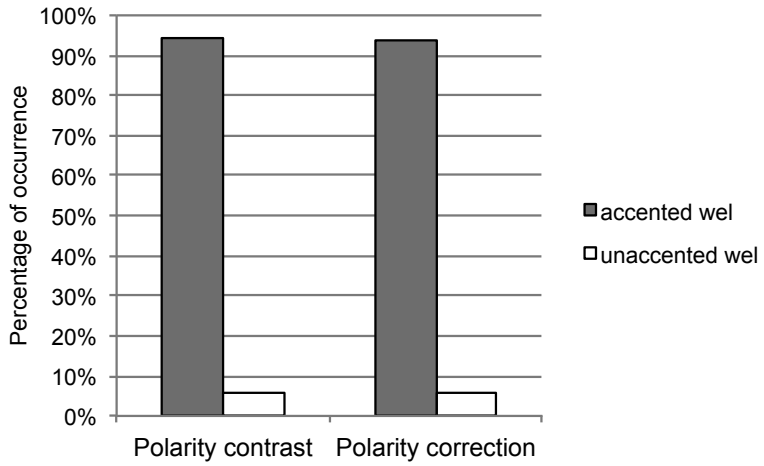


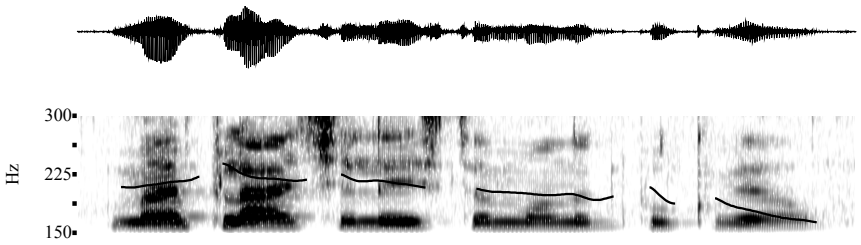
Figure 2.2: The averaged distribution in % (over speakers) of accented vs. unaccented *wel* produced in polarity contrast and in polarity correction by Dutch speakers.

Figure 2.2 demonstrates that the particle *wel* was indeed mostly accented. A binomial logistic regression analysis (Pinheiro & Bates, 2000; Baayen, 2008) with ACCENTUATION OF *WEL* (Yes, No) as a function of CONDITION (polarity contrast, polarity correction), and SPEAKER and ITEM as crossed-random factors, confirmed that accented particles were significantly more frequent than unaccented particles (ß = 3.11, *SE* = 0.29, $p < .0001$). There was no effect of condition on the accentuation of *wel* ($p = .58$).

Finally, we analyzed the intonational realization of the particle *wel* across tasks to find support for Hogeweg's generalization about different degrees of prominence of *wel* in relation to type of context condition (see sections 1.2.2.1 and 2.1). We found two

general contours, a hat pattern contour (section 1.2.1.1) with a rise on the contrastive topic *Op mijn plaatje* ("In my picture") followed by a downstepped fall on the particle *wel* (i.e., !H*L L%, following ToDI conventions, Gussenhoven, 2005), as shown in Figure 2.3(a), and one in which there was a fall on the particle *wel*, with or without further accents on nominal elements before it (H*L L%, as shown in Figure 2.3(b)), resembling a peak-like contour. The particle *wel* sounded more prominent when it was realized with a fall, compared to a downstepped fall.

(a)



Op mijn plaatje	leest	de man	het boek	wel	
In my picture	reads	the man	the book	PRT	
In my picture the man is indeed reading the book					
%L - H*				!H*L	

Figure 2.3(a)-(b) - Continued on next page

(b)

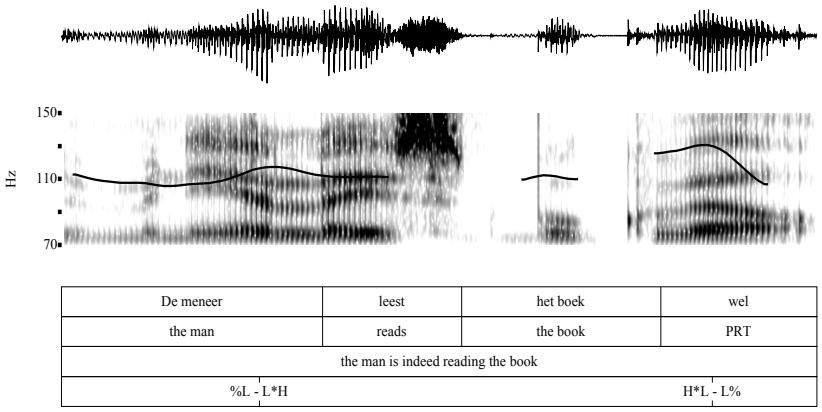


Figure 2.3(a)-(b): Example pitch tracks of the particle *wel* realized with a !H*L pitch accent in polarity contrast (panel (a), female speaker) and with an H*L in polarity correction (panel (b), male speaker). The ToDI annotations are shown in the last tier.

Finally, Figure 2.4 shows the averaged distribution of accent types realized on *wel*: downstepped falls (i.e., !H*L L%), falls (i.e., H*L L%) and other accentual realizations comprising cases of *wel* realized as a low rise (i.e., L*H H%) or as a high rise (i.e., H* H%), following ToDI (both collapsed under the category others). The particle *wel* was mostly realized as a downstepped fall (i.e., !H*L L%) in polarity contrast and mostly as a fall (i.e., H*L L%) in polarity correction.

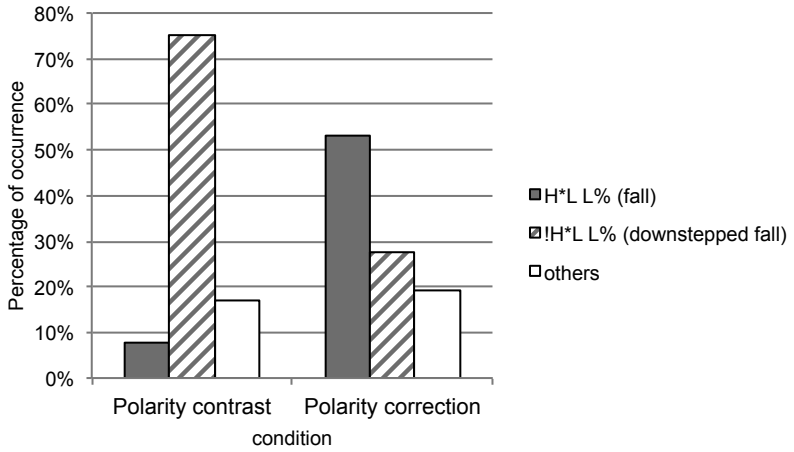


Figure 2.4: The averaged distribution in % of the accentual realizations on (the accented cases of) *wel* produced in polarity contrast and in polarity correction by Dutch speakers.

To corroborate these differences across conditions, we calculated a multinomial logistic regression analysis with TYPE OF ACCENT (the accents shown in Figure 2.4) as a function of CONDITION (polarity contrast, polarity correction, the reference category was set to the category others). The model confirmed that compared to polarity contrast, in polarity correction the particle *wel* was produced significantly more often as a fall (H*L: ß = 1.76, *SE* = 0.31, $p < .0001$), and less often as a downstepped fall (!H*L: ß = -1.14, *SE* = 0.25, $p < .0001$).

2.4.2 German

The German data were coded in the same way as the Dutch data (Verum focus, affirmative particles, others and unmarked), see Figure 2.5. In German, the category others did not include any instances of an accent on the non-finite verb. Instead, there were some cases, in which participants first produced the particle *doch* as a separate utterance, followed by an utterance with Verum focus.

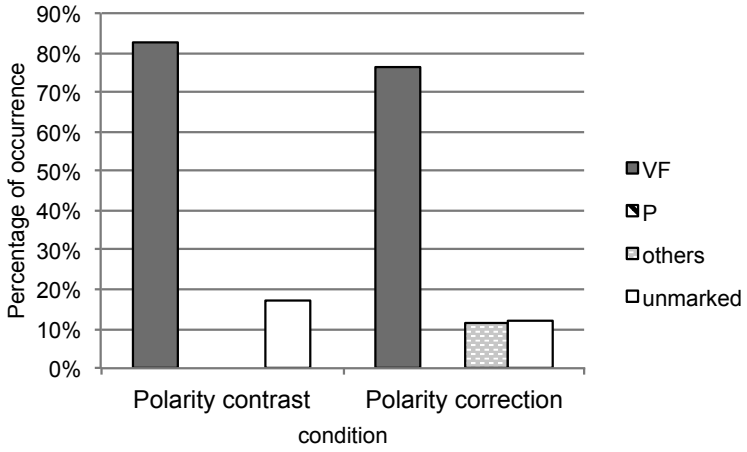
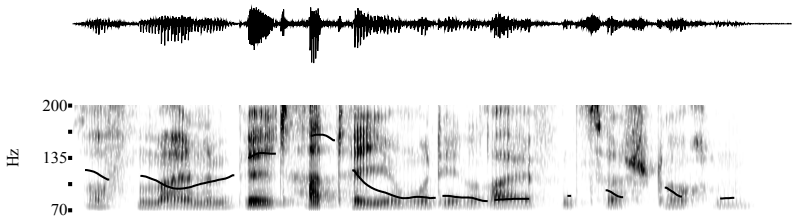


Figure 2.5: The averaged distribution of Verum focus (VF), affirmative particles (P), other realizations (others) and unmarked cases produced in polarity contrast and in polarity correction by German speakers.

Figure 2.5 shows that German speakers never realized affirmative particles, in any of the polarity contexts. Instead, they produced Verum focus in more than 70% of the cases, far

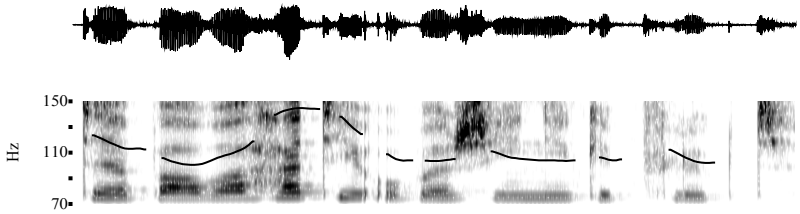
more often than the other options. A multinomial logistic regression analysis with LINGUISTIC MEANS (as illustrated in Figure 2.5; the reference category was set to the category unmarked) as a function of CONDITION (polarity contrast, polarity correction) revealed that overall, there were significantly more Verum focus productions (ß = 1.62, *SE* = 0.14, $p < .0001$), significantly less affirmative particles (ß = -4.00, *SE* = 1.00, $p < .0001$), and other realizations (ß = -4.09, *SE* = 1.10, $p < .0001$). Furthermore, there was an effect of condition: the category others (i.e., *doch* + Verum focus) was more frequent in polarity correction than in polarity contrast (ß = 3.96, *SE* = 1.03, $p < .0001$), whereas no such effect was found on the frequency of Verum focus and affirmative particles (all *p*-values > .2). In Figure 2.6(a) and (b) we provide typical examples of Verum focus in utterances containing a finite auxiliary (*hat*, "has") and realized in polarity contrast and in polarity correction, respectively; Figure 2.6(c) shows an example of Verum focus preceded by the particle *doch*.

(a)



Auf meinem Bild	hat	der Junge	den Reifen	zerstochen
In my picture	has	the boy	the tyre	punched
In my picture the boy punched the tyre				
L*+H (H-) ^H* L-				

(b)



Der Bauer	hat	die Aubergine	gepflueckt
the farmer	has	the eggplant	picked
The farmer picked the eggplant			
L* ^H* L-			

Figure 2.6(a)-(b)-(c) - Continued on next page.

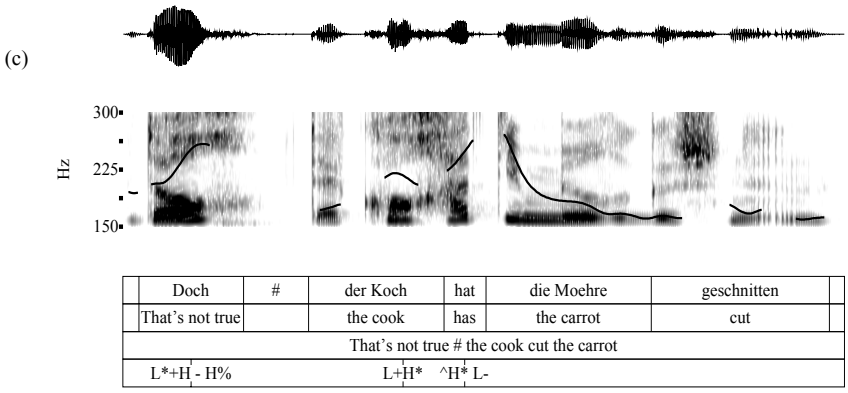


Figure 2.6(a)-(b)-(c): Example pitch tracks of polarity contrast utterance (panel (a), male speaker) and polarity correction utterance (panels (b) and (c), spoken by a male and a female speaker, respectively), both realized with a high-falling nuclear contour on the auxiliary (*hat*, "has"). In panel (c), Verum focus is preceded by the particle *doch*. The GToBI annotations are shown in the last tier.

In order to corroborate the effect of language on the types of linguistic means (Verum focus and/or affirmative particles), we ran a binomial logistic regression model with LINGUISTIC MEANS (Verum focus, affirmative particles shown in Figures 2.1. and 2.5) as a function of LANGUAGE (Dutch, German) and CONDITION (polarity contrast, polarity correction); SPEAKER and ITEM were added as crossed-random factors. In both contexts, there was a highly significant effect of LANGUAGE (ß = -14.9, *SE* = 2.1, $p < .0001$), and

no effect of CONDITION (p = .3); the interaction between LANGUAGE and CONDITION approached significance (ß = 4.35, SE = 2.2, p = .06).[35]

Finally we tested whether condition affects the degree of prominence also in German Verum focus. Unlike Dutch *wel*, Verum focus was always realized with a high-falling nuclear contour on the finite verb (i.e., H* L-, according to GToBI), independent of condition. Following Ladd and Morton (1997) and Rietveld and Gussenhoven (1985), the prominence of an accented word is related to the height of the accentual peak. In what follows, we measured the pitch range of the falling accent on the finite verbs in semitones (cf. Nolan, 2003). Results of a linear mixed-effects model (Baayen, 2008) with SEMITONE DIFFERENCE as dependent variable, CONDITION as predictor variable (polarity contrast, polarity correction), and SPEAKER and ITEM as crossed-random factors (allowing for individual adjustements of the intercept for speakers and items, see Cunnings, 2012; Barr, Levy, Scheepers, & Tily, 2013) showed that the pitch range was significantly smaller in polarity contrast (on average 3.1 semitones) than in polarity correction (on average 5.3 semitones, ß = 1.85, SE = 0.39, p < .0001). Thus, our analysis suggests that Verum focus is marked more prominently in polarity correction than in polarity contrast.

2.5 Discussion

The primary aim of our study was to investigate which linguistic devices (intonation or affirmative particles) speakers of German and Dutch, two closely related languages, use

[35] For the reasons explained in footnote 34, we changed one instance of Verum focus to a particle in both German contexts.

to signal a polarity contrast and a polarity correction and whether polarity correction is marked with more prosodic prominence than polarity contrast. Despite the similarities between these languages regarding lexicon, syntax, and focus-to-accent rules (section 1.2.1.1), the linguistic marking of polarity contrast and polarity correction turned out to be very different: In German, speakers generally produced Verum focus (i.e., a high-falling nuclear contour on the finite verb) in the two contexts and they never produced a sentence-internal affirmative particle (like *schon* or *wohl*). They did, however, sometimes use a separate affirmative particle (*doch*) that preceded Verum focus. The use of the particle *doch* together with Verum focus occurred exclusively in the polarity correction cases. This particle was not integrated with the rest of the utterance (neither intonationally nor syntactically) and was always followed by Verum focus. Therefore, it never carried the polarity correction function by itself. Hence, it appears that our dialogue-game studies confirm the tendency found in monologues (Dimroth et al., 2010): German speakers prefer to mark polarity by producing Verum focus. Future experimental studies will have to determine the specific meaning contribution of the affirmative particles *doch, schon* and *wohl* in German.

Dutch speakers, on the other hand, mostly used the accented affirmative particle *wel* to signal polarity contrast and correction and hardly accented the finite verb. Even when Dutch speakers did not use the particle *wel* they refrained from assigning a nuclear pitch accent to the finite verb (and rather accented the internal argument of the utterance, as in a non-contrastive utterance). In this respect, Dutch differs in a remarkable way from German. There is no ready syntactic or phonological explanation for this cross-linguistic difference. The question remains what Dutch speakers do when they are "forced" not to

use particles. Pilot reading data containing polarity contrast utterances without particles show that Dutch speakers do not produce Verum focus in these instances either. It hence appears that Verum focus is not the preferred option in these polarity contrast and polarity correction cases, a finding which goes in line with previous observations on this phenomenon (cf. Gussenhoven, 1983, section 1.2.2.1). However, Verum focus is produced in second language acquisition (Italian). Turco, Dimroth and Braun (submitted, see Chapter 4), for instance, tested what native speakers of Dutch and German do to mark polarity contrast when the input of the target language is unclear in comparable contexts. The authors found that both German and Dutch speakers produce intonation patterns that are very similar to German Verum focus when learning Roman Italian. Whereas German learners of Roman Italian can be argued to transfer their L1 intonation contours onto their L2 Italian, this interpretation is not possible for Dutch learners. After all, they employ a strategy that differs from both their L1 and L2. Strikingly, their pattern is in line with the classification of Germanic languages as being more assertion-oriented than Romance languages (Dimroth et al., 2010, section 1.2.2). The data from Dutch and German learners of Italian hence appear to reflect the common underlying trait between German and Dutch.

These empirical differences between German and Dutch speakers might be taken to suggest that the Dutch particle *wel* and the German Verum focus are functionally equivalent in signaling polarity contrast and correction. This is in line with earlier suggestions (Sudhoff, 2012) and findings (Dimroth et al., 2010). It is possible that the functional equivalence of intonation and particles is dependent on the kind of particles (modal, affirmative, or focus particles) under consideration (Schubiger, 1965 for modal

particles). Nonetheless, we believe that the functional equivalence of Verum focus and the affirmative particle *wel* does not necessarily imply that both devices operate on the same level (section 1.1.3).

Surprisingly, we also observed that in polarity corrections, Dutch speakers used less particles than in polarity contrast. We have no explanation for the fact that an effect of condition was found for Dutch speakers but not for German speakers (compare Figures 2.1 and 2.5). More investigations are needed to test whether this effect of condition is reliable and can be replicated.

Apart from the differences across languages, we found a striking similarity regarding the marking of polarity contrast vs. polarity correction: In both languages, polarity correction was marked with greater prominence than polarity contrast, thereby reflecting the gradient nature of the notion of (polarity) contrast. For instance, in German polarity correction, the height of the accentual peak realized on the finite verb was higher in polarity correction than in polarity contrast; similarly, in Dutch polarity correction the particle *wel* was realized more often as a fall (i.e., H*L L%), which sounded more prominent than the downstepped fall (i.e., !H*L L%) produced in polarity contrast. This difference appears to support Hogeweg's (2009) claim that an increased prominence of *wel* points to different degrees in the explicitness of a context denial. In our view, it can also be argued that such a difference in prominence is due to a secondary effect of the topic marking prior to the comment (section 2.1): In polarity contrast, *wel* is preceded by a prominent contrastive topic accent (e.g., *Op mijn plaatje*), while in polarity correction, the topic is non-contrastive and hence not very salient prosodically (e.g., Braun, 2006).

CHAPTER 3

3 VERUM FOCUS IN GERMAN AND FRENCH[36]

3.1 Introduction

In this chapter we investigate the intonational marking of polarity contrast (i.e., Verum focus) in utterances containing auxiliary verbs across two typologically distinct languages, German and French.

Previous work has mainly been concerned with the intonational realization of focused content words, which primarily occur in referential expressions (e.g., *the LADY is tearing the banknote* as opposite to *the child is tearing the banknote*, Jun & Fougeron, 2000 for French; Baumann et al., 2006 for German, among others). Here we investigate a phenomenon in which it is not directly obvious to what extent focus can be formally associated with a specific word of the utterance (cf. Gussenhoven, 1983). In cases of polarity contrast, the pragmatic focus rests on the finite verb, the carrier of the assertion (Klein, 1998, 2006). As seen in Chapter 1, a finite verb asserts a fact about the topic and the comment of the utterance. A (contrastively) accented finite verb validates this assertion if previously negated or questioned, and confines it in terms of illocutionary force to a specific topic component (Klein, 1998, 2006). In the (German) literature this accentuation phenomenon is typically referred to as Verum focus (e.g., Höhle, 1988, 1992; Lohnstein & Blühdorn, 2012).

[36] A version of this chapter has appeared as Turco, G., Dimroth, C. and Braun, B. (2013) "Intonational means to mark Verum focus in German and French". *Language and Speech*, 56(4), pp. 460-490.

CHAPTER 3

From previous work on the intonational marking of focus in German (e.g., Baumann et al., 2007; Féry & Kügler, 2008), we hypothesize that Verum focus can be phonologically described as a nuclear pitch accent on the finite verb (see Figure 3.1).

Figure 3.1: Schematic representation of Verum focus in German as a high-falling accent ("In my picture the child DID tear the banknote")

In Experiment 1 (i.e., the picture-difference task described in section 1.5) performed with German speakers, we will test this hypothesis by providing more systematic evidence on the phonological description of Verum focus in terms of accent placement and accent types.

The definition of Verum focus as an intonational phenomenon seems to be very Germanic-rooted. Therefore, it is particularly worthwhile to study whether and how this accentuation effect is produced in French, a language in which tonal patterns are strongly governed by structural constraints. In brief, the lowest prosodic unit is the accentual phrase (AP, henceforth, see, Jun & Fougeron, 2000; 2002, section 1.2.1.2). The final accent is obligatorily placed on the last full syllable of the content word (i.e., H2 on *-ré* in Figure 3.2) or on the function word when phrase-final (e.g., *Regarde-LA*, "look at HER", Delais-Roussarie, 1999 among others). French accentual phrases optionally contain an initial accent (section 1.2.1.2), which is typically realized on one of the first syllables of an AP-initial content word (H1 on *dé-* in Figure 3.2). It is important to note that the initial

accent seems to be only rarely associated with AP-initial monosyllabic function words (cf. Jun & Fougeron, 2000; 2002 and references therein). In contrastive contexts, both the initial accent and the final accent can attract the focal accent (Hf, see section 1.2.1.2). In Figure 3.2 an example of focal accent (dotted line) on the initial accent (solid line, H1) is illustrated.

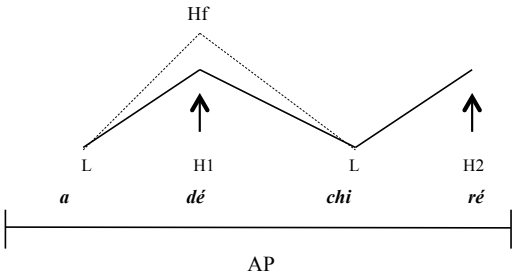


Figure 3.2: Schematic representation of LHLH accentual pattern realized within the AP */a déchiré/* ("has torn"). As indicated by the arrows, the final accent (H2) is produced on the last syllable of the content word (*ré*) and the initial accent (H1) on its first syllable (*dé*). In this example, the focal accent (Hf) replaces the H1.

Naturally, a strong effect of structural constraints on the intonational realization may partly or totally rule out the phonological representation of Verum focus as an "accented" finite verb (followed by "deaccented" postfocal words) in French. It is not clear from the literature, whether and how French speakers would produce Verum focus. In Experiment 2 (i.e., the picture-difference task performed with French speakers, see section 1.5), we investigate whether in French pragmatic factors like polarity contrast

license the presence of a focal accent on the auxiliary verb, a functionally strong but phonologically weak element.

Unlike content words, which form prosodic words (ω) and hence constitute the domain of word stress (e.g., Nespor & Vogel, 1986), auxiliaries and most other function words are frequently unaccented and integrated into the prosodic structure at a phrase level (ϕ), as in [(*a*) (*déchiré*)$_{\omega}$]$_{\phi}$. When focused, however, function words can change their prosodic status (see Selkirk, 1995, section 1.2.2.3). In German, as mentioned above, a monosyllabic auxiliary can be accented and thus be promoted to a prosodic word (cf. Hall, 1999). To the best of our knowledge, there is no experimental evidence regarding prosodic word promotion of function words in French. We therefore aim to fill in this gap. Results of our study might therefore also have implications for French intonational phonology. Furthermore, the cross-linguistic comparison between German and French will inform us whether the functional importance attributed to finite verbal elements in German (cf. Klein, 1998, 2006; Bernini, 2009; Dimroth et al., 2010) also holds for French.

The current chapter is structured in two parts: the first part starts with a summary of previous studies on German phonology and focus marking (section 3.2). On the basis of this review, a number of predictions are tested by performing the picture-difference task with German native speakers (Experiment 1, section 3.3). Section 3.4 provides information about the data selection and annotation. Subsequently, we present the data analyses, including the interrater reliability score on the intonation labels assigned to the elicited utterances. The results on Verum focus in German are discussed in the last section of this first part. In the second part of the chapter, we summarize previous work

on French phonology and focus marking (section 3.7). From here, we address the question of whether it is possible to realize a focal accent on monosyllabic auxiliaries in French and test our predictions by using the picture-difference task procedure with French native speakers (Experiment 2). We then present and discuss the results of Experiment 2 (from section 3.9 to 3.11). Finally, we will turn to the conclusions based on the main findings and discuss the general implications of Verum focus in both languages.

3.2 Basics of German intonational phonology

3.2.1 Pitch accent types

We refer here to the most recent Autosegmental-metrical description of German, GToBI (Grice, Baumann, et al., 2005, section 1.5). Nonetheless, when discussing focus marking, we also include other Autosegmental-metrical approaches (see, for instance, Wunderlich, 1991; Féry, 1993; Grabe, 1998).

According to GToBI, there are two levels of phrasing: the intermediate phrase (ip), corresponding to a tone unit and demarcated by phrase accents (e.g., L-), and the intonational phrase (IP), corresponding to a major tone group (cf. Ladd, 2008) and demarcated by boundary tones (e.g., L%). Each intonational phrase contains at least one intermediate phrase; each intermediate phrase contains at least one pitch accent. Phrase accents determine the contour from the last pitch accent until the end of the intermediate phrase; GToBI distinguishes three types: L-, H-, !H-. It has been claimed that phrase accents have a secondary association with a metrically strong syllable following the nucleus (Grice, Ladd, & Arvaniti, 2000; but see, Barnes, Veilleux, Brugos, & Shattuck-

Hufnagel, 2010; van de Ven & Gussenhoven, 2011 for experimental evidence in English and Dutch, respectively).

As far as the pitch accents are concerned, following Benzmüller and Grice (1998) as well as Grice and Baumann (2007), the nuclear syllable is the last pitch accent in an intermediate phrase and is usually perceived as the most prominent syllable of the phrase (section 1.2.1.1). Accents preceding the nucleus are referred to as *prenuclear* accents. GToBI distinguishes six types of accents: H*, H+L*, H+!H*, L+H*, L*+H, and L*. In Table 3.1, we illustrated their *f0*-contours when followed by an L- phrase accent.

Accent types		Schematic contours
H*	L-	
H+L*	L-	
H+!H*	L-	
L+H*	L-	
L*+H	L-	
L*	L-	

Table 3.1: Schematic contours of the six accent types according to GToBI (adapted from Grice, Baumann, et al., 2005). The tick black line indicates the starred tone associated with the metrically strong syllable, the thin black line indicates the phrase accent (L-). Some of these accent types can also be combined with the H- phrase accent.

In nuclear position, the full range of pitch accents shown in Table 3.1 is possible; each of them contributes a specific communicative function (for details, see Grice, Baumann, et

al., 2005). Prenuclear accents tend to be mainly realized with rising accents, such as H*, L+H*, L*+H, and more rarely as L* (e.g., Mehlhorn, 2001; Braun, 2006).[37]

H-tones can be downstepped (section 1.2.1.1) or *upstepped* (i.e., transcribed as ^H in GToBI), that is, realized with a higher pitch than preceding H-tones in the same intermediate phrase (see, for instance, Truckenbrodt, 2002).

3.2.2 Intonational marking of focus

In broad focus contexts, German locates the nuclear accent on the internal argument of the intonation phrase, unless it is pronominalized or contextually given (e.g., Uhmann, 1991, section 1.2.1.1; Féry & Samek-Lodovici, 2006; Truckenbrodt, 2007).

Different tonal realizations are used to convey distinct information structural meanings. Researchers generally agree upon the fact that downstepped pitch accents are more frequently used in broad focus than in contrastive and non-contrastive narrow focus contexts (section 1.2.1.1). For instance, in a reading task conducted by Baumann et al. (2006), the authors found that in broader foci (cued by context questions like *What's new?, What about Manuela?, What does Manuela want?*), German speakers produced more downstepped nuclear pitch accents (i.e., !H*) than in contrastive and non-contrastive narrow focus (cued by questions like *What does Manuela want to paint?* and *Manuela wants to paint faces?*); rather, these foci were typically realized by the medial

[37] Interrater reliability in the annotation process is typically measured by comparing the labels placed by transcribers on each potential site for a tonal realization. In a label consistency check study carried out for German (Grice, Reyelt, Benzmüller, Mayer, & Batliner, 1996), there was disagreement for the following accent pairs: H* vs. L+H* (28%), L*+H vs. L* (17%), L+H* vs. L*+H (16%), H* vs. H+!H* (15%).

peak accent (i.e., H*), followed by deaccented postfocal elements and optionally preceded by prenuclear accents with lowered peak heights (e.g., Baumann et al., 2006; Féry & Kügler, 2008).

Pitch accents also differ with respect to the degree of givenness of referents and their activation state (section 1.1.1). In particular, the interaction between givenness and deaccentuation and newness and medial peak accent (i.e., H*) was tested in a series of auditory and visual priming experiments by Baumann and Hadelich (2003) and Grice and Baumann (2006). Results from these studies showed that deaccentuation was systematically chosen for marking given information, whereas the H* was significantly appropriate for marking *new* referents; moreover, findings pointed to an intermediate status of the "early" peak accent (i.e., H+L*, Grice, Baumann, et al., 2005) for marking accessibility status: only in a number of cases, the H+L* was significantly preferred over H* and deaccentuation for marking accessibility (e.g., in whole-part relations such as *car* > *handbrake*). Hence, this suggests that accessibility should be regarded as a gradient category.

Apart from such categorical differences, certain information structure distinctions are signaled by gradient, phonetic means. In a reading production study, Baumann et al. (2007) found that when speakers use identical pitch accents for narrow and broad foci, pitch accents in narrow focus are realized with higher and delayed peaks and with a greater pitch excursion than phonologically identical accents in broad focus contexts (see Féry and Kügler (2008) for similar findings); also, the narrow or contrastive focus constituents present longer durations than those ones realized in broad focus condition. In addition to tonal cues, articulatory phenomena like vowel hyper-articulation of the

nuclear pitch-accented syllable play an important role in enhancing contrastive focus prominence.

The hat pattern contour represents a further way to intonationally encode contrast (section 1.2.1.1). It has been associated with double contrast sentences, containing both a contrastive topic and a contrastive focus (e.g., Büring, 1997; Mehlhorn, 2001). In the phonological literature, there is some disagreement on the accent types involved in this contour (e.g., Wunderlich, 1991; Féry, 1993; Krifka, 1998). Wunderlich (1991) described it as H* H L*, where H* marks the topic and the L* encodes the focus, with a floating H tone in-between. Féry (1993) makes a distinction between two types of hat pattern contours: the first one is transcribed as H* H*L and involves the complete linking of two H*L pitch accents; the second one is transcribed as L*H H*L, that is, with two fully realized accents. While the former can be produced in different contexts, the latter is mainly used when encoding topic-comment structures (LH* for the topic and H*L for the comment). Grabe (1998), on the other hand, transcribes the hat pattern as H*> H*+L, in which the first tone does not have a leading tone (L+). Finally, Grice et al. (2005) do not discuss about this contour in their study nor in the training material. In other words, it seems that there is no agreement on the phonological representation of the hat pattern in German. Moreover, in Braun's study (2006), this contour appeared to be more frequent in sentences involving quantifiers and accented adjectives than in syntactically neutral utterances (e.g., Braun, 2006). However, the author found only few occurrences of hat patterns (i.e., 18.6% of the sentences uttered in contrastive condition) in her read speech data. Thus, the actual realization of this contour seems to be not very frequent either.

CHAPTER 3

3.3 Experiment 1: Picture-difference task in German

We adopted the German version of the picture-difference task described in section 1.5. Context negation utterances spoken by the German confederate speaker in polarity contrast condition are listed in Appendix A.

3.3.1 Participants

For the phonological analysis, we randomly chose eight German native speakers (2 male and 6 female, average age = 23.3, *SD* = 5.9) out of the pool of participants presented in section 2.2.1.

3.3.2 Materials

In the present experiment, we compared polarity contrast utterances to identical utterances with no polarity-switch but with a change in the action (i.e., henceforth *non-polarity contrast* condition, section 1.5). An example polarity contrast condition is shown in the B-utterance in (44), an example non-polarity contrast condition in the B-utterance in (45):

(44) A: *Auf meinem Bild hat das Mädchen den Geldschein nicht zerrissen.*
In my picture has the girl the banknote NEG torn
("In my picture the girl did not tear the banknote")
B: *Auf meinem Bild hat das Mädchen den Geldschein zerrissen.*
In my picture has the girl the banknote torn
("In my picture the girl torn the banknote")

(45) A: *Auf meinem Bild hat der Postbote ein Paket abgegeben.*
In my picture has the postman a package delivered
("In my picture the postman delivered a package")
B: *Auf meinem Bild hat der Postbote eine Zeitung zerrissen.*
In my picture has the postman a newspaper torn
("In my picture the postman torn a newspaper")

In both conditions, the German confederate speaker (section 1.5) produced the entire utterance in one intermediate phrase. More specifically, in polarity contrast condition, she realized a prenuclear L*+H accent on the possessive pronoun *meinen* of the prepositional phrase and a nuclear accent (H* or !H* or ^H*) on the negation particle *NICHT* ("not"). In non-polarity contrast condition, she mostly produced a L*+H accent on the possessive pronoun and a nuclear H* (or !H* or ^H*) accent on the object noun of the utterance.

For the research purposes of the present chapter, we will concentrate our investigation on the auxiliary-items only (section 1.5), which in German are expressed with the monosyllabic *hat* ("has").

3.3.3 Procedure

The procedure was the same as described in section 1.5.

3.3.4 Research questions and predictions

We tested how the tonal structure of polarity contrast utterances differs in terms of accent placement and accent type with respect to non-polarity contrast utterances. On the basis of the studies mentioned above (see also section 1.2.1.1), we predicted that there is a direct relationship between nuclear accent placement and focus exponent: in polarity contrast contexts a nuclear fall is expected on the auxiliary (i.e., Verum focus), in non-polarity contrast contexts this is expected on the object noun. As far as accent types are concerned, we hypothesized that the focus exponents (i.e., the auxiliary *hat* in polarity contrast and the object noun in non-polarity contrast) will be predominantly realized with medial peak accents (e.g., H*). In both conditions the non-finite verb is expected to be unaccented (e.g., Uhmann, 1991). This also holds for the subject noun: in both conditions the referent encoded by the subject noun (e.g., *das Kind*, "the child", see Figure 3.1) represents given or active information as it is introduced both visually on screen and auditorily by the confederate speaker.

Moreover, speakers also need to encode the contrast between the pictures (i.e., *In MY picture…*). Hence, an alternative prediction is that German speakers will produce hat patterns in polarity contrast condition. This prediction is strengthened by claims that hat patterns have been shown to be more frequent in Dutch productions when the two pitch accents are "to be made in close succession" (Levelt, 1989: 405). In our materials, the two contrasted words are separated by one syllable (i.e., *Bild* "picture"), which might increase the likelihood of hat pattern realizations. However, no firm predictions are possible since, as mentioned earlier, previous reading studies in German do not agree on the occurrence of hat patterns in such contexts. Thus, we also investigate whether in

semi-spontaneous productions hat patterns are frequently used in such double contrast conditions and, if so, which phonological form they have.

3.4 Data selection

The 192 productions for German (i.e., 12 auxiliary-item pictures x 8 participants x non-polarity contrast plus polarity contrast condition = 192 items) were first coded on the phrase (ip), word and syllable level using Praat (Boersma & Weenink, 2012). In order to ensure coherence of the pitch analysis, 38 non-polarity contrast utterances in which participants produced pauses within phrases, and utterances with hesitations or disfluencies were not included. Furthermore, 11 non-polarity contrast and 29 polarity contrast utterances with different tenses or aspects (e.g., use of the aspectual adverb *gerade*) and with a verb different from that of the confederate were discarded, as these utterances do not only signal Verum focus but may also signal a semantic contrast. This left 47 non-polarity contrast and 67 polarity contrast cases for analysis. The utterances were transcribed according to GToBI (Grice, Baumann, et al., 2005, section 1.5). A random selection of forty percent of the data for each condition (both non-polarity contrast and polarity contrast) were also annotated by another transcriber to compute the Kappa Coefficient of Agreement[38] (Cohen, 1960), a common measure of interrater reliability.

[38] Kappa was calculated by using the formula: Kappa = (Po − Pc) / (1 − Pc), that is, as the proportion of agreements that was actually observed (Po) between raters, after adjusting for the proportion of agreements that occured by chance (Pc).

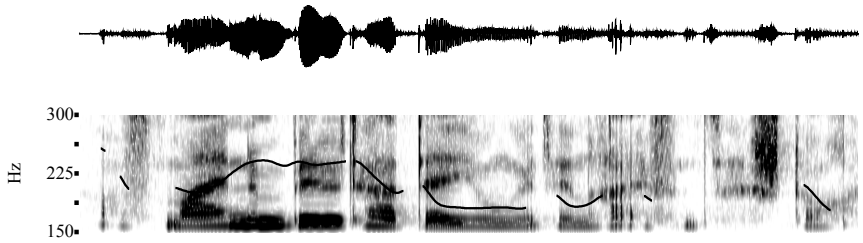
Finally, all statistical analyses were conducted by using the R software package (2012).

3.5 Results

The interrater reliability score for the labels on the auxiliary *hat* had a Kappa of 0.79 (*SD* = 0.07).[39] For the object noun, Kappa was 0.68 (*SD* = 0.09). Both Kappa values signals a very high level of agreement (Landis & Koch, 1977).

In most of the trials (*n* = 47 non-polarity contrast; *n* = 59 polarity contrast), participants produced a prosodic break (intermediate or intonation phrase) after the contrastive topic in the prefield (i.e., *Auf meinem Bild*, section 1.2.1.1). In other words, there were only few polarity contrast trials in which the intermediate phrase spanned the entire utterance, including the prenuclear accent produced on the contrastive topic *Auf meinem Bild* (12%, 8 times). These cases were realized as hat patterns, with a pitch rise (always realized as L*+H) on the possessive pronoun *meinem,* a sustained high pitch (not changing more than 10 Hz) and a pitch fall either on the auxiliary (twice as H+L* and twice as H* L-) or on the object noun (once as H+L* and three times as H*L-). One example of hat pattern realized as H+L* on the auxiliary is shown in Figure 3.3.

[39] Due to the small data set, downstepped and upstepped accents such as !H* and ^H* were collapsed into the category H*.



Auf	meinem	Bild	hat	der Junge	den Reifen	zerstochen
In	my	picture	has	the boy	the tyre	punched
In my picture the boy punched the tyre						
	L*+H		H+L*			

Figure 3.3: Example pitch track of hat pattern contour with a rise on *meinem* (realized as L*+H) and a pitch fall on *hat* (realized as H+L*), spoken by a female German speaker. Initial and final boundary tones are always low in all productions and therefore not shown in the figures.

Regarding the utterances including a prosodic break in both non-polarity contrast and polarity contrast condition, we first describe all accent realizations of the auxiliary for non-polarity contrast condition and compare them to the intonation patterns produced on the auxiliary in polarity contrast condition. The same comparisons will be done for the accent realizations of the subject noun, the object noun and the non-finite verb.

In Table 3.2, we report the average percentage of occurrence and the standard deviation of the pitch accent types (followed by a L- phrase accent) produced on *hat* across both contexts.

Pitch accents on *hat*	Non-polarity contrast		Polarity contrast		Contour
	M	*SD*	*M*	*SD*	
H* - incl. !H* and ^H* (L-)	1.4	3.9	86.7	15.4	
H+L* (L-)	0.0	0.0	1.6	4.4	
H+!H* (L-)	0.0	0.0	9.2	14.3	
unaccented	98.6	3.9	2.5	7.1	

Table 3.2: The averaged distribution in % (over speakers) and the standard deviation of the pitch accents produced on the auxiliary *hat* with respective schematic contours (adapted from Grice, Baumann, et al., 2005).

Table 3.2 shows that in non-polarity contrast condition, the auxiliary *hat* was generally not accented, with the exception of one case, which was realized with the medial peak accent H* (L-). In polarity contrast condition, the auxiliary *hat* was mostly accented with the H* (L-) accent and with the early peak accents (i.e., H+L* and H+!H*), whereas it was left unaccented in only few cases. These differences of accent realizations according to pragmatic context were statistically tested by performing a multinomial logistic regression analysis (Bates & Sarkar, 2007; Jaeger, 2008). We included CONDITION (non-polarity contrast, polarity contrast) as a fixed factor (predictor) and ACCENTS TYPES (the ones listed in Table 3.2) as dependent variable. The reference category was set to the pitch accent typically used for focus marking in German, that is, the medial peak H* (e.g., Baumann et al., 2006). The intercept of the model represented the polarity contrast condition. Not surprisingly, results showed significantly more unaccented auxiliaries in non-polarity than in polarity contrast condition (ß = 4.41, $SE = 0.86$, $p < .0001$), whereas the other pitch accents did not differ significantly (all p-values > .2).

In Table 3.3, we report the average percentage and the standard deviation of the pitch accent types produced on the subject noun across contexts.

Pitch accents on the subject noun	Non-polarity contrast		Polarity contrast		Contour
	M	*SD*	*M*	*SD*	
H* - incl. !H*	42.7	20.9	12.5	35.4	
L*	15.5	14.5	2.3	6.4	
L+H*	9.1	10.4	0.0	0.0	
L*+H	9.2	17.1	0.0	0.0	
unaccented	23.5	26.9	85.2	35.0	

Table 3.3: The averaged distribution in % (over speakers) and the standard deviation of the pitch accents produced on the subject noun with respective schematic contours (adapted from Grice, Baumann, et al., 2005).

From Table 3.3 we can observe that in non-polarity contrast condition, the subject noun was mainly accented (16.3% of the H* cases were downstepped: !H*). In polarity contrast condition, the subject noun was mainly unaccented. A multinomial logistic regression analysis (with H* set as reference category) revealed that speakers realized significantly less unaccented subject nouns in non-polarity than in polarity contrast condition (ß = -3.43, *SE* = 0.70, $p < .0001$), statistically confirming the effect of condition. Other accent types did not differ significantly (all *p*-values > .8).

Finally, in Table 3.4 we report the average percentage and the standard deviation of the pitch accent types realized on the object noun across contexts.

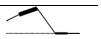
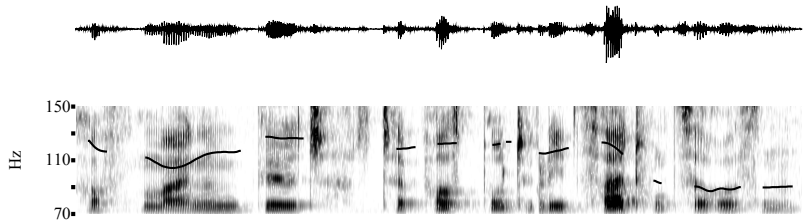
Pitch accents on the object noun	Non-polarity contrast		Polarity contrast		Contour
	M	*SD*	*M*	*SD*	
H* (L-)	57.7	20.2	1.2	3.5	
H+L* - incl. !H+L* (L-)	33.9	27.1	0.0	0.0	
L+H* (L-)	1.4	3.7	0.0	0.0	
L*+H (L-)	5.8	7.9	0.0	0.0	
unaccented	1.2	3.3	98.8	3.5	

Table 3.4: The averaged distribution in % (over speakers) and the standard deviation of the pitch accents produced on the object noun with respective schematic contours (adapted from Grice, Baumann, et al., 2005).

Table 3.4 shows that in non-polarity contrast condition, the object noun was always accented, predominantly with H* L- or H+L* L- (6.9% of the H+L* cases were downstepped: !H+L*). In polarity contrast the object noun was generally unaccented; except for one case (i.e., H* L-). A multinomial logistic regression analysis (with H* set as reference category) revealed that speakers realized significantly less unaccented object nouns (compared to H* L- set as reference category) in non-polarity contrast condition than in polarity contrast condition, (ß = -6.41, SE = 1.17, $p < .0001$). No other accent distributions differed significantly (all p-values > .8).

Finally, the non-finite verb was unaccented 97.9% of the time in non-polarity contrast condition and 97% of the time in polarity-contrast condition, with the exception of few cases (once realized as H+L* in non-polarity contrast and once as H* L- in polarity contrast). A multinomial logistic regression analysis confirmed that accent distributions did not differ significantly according to pragmatic context (all *p*-values > .3). In Figure 3.4(a) and (b) typical examples of utterances spoken in non-polarity and polarity contrast condition are provided.

(a)



Auf	meinem	Bild	hat	der Postbode	die Zeitung	zerissen
In	my	picture	has	the postman	the newspaper	torn
In my picture the postman tore the newspaper						
	L*+H			H*	H*	L-

Figure 3.4(a)-(b) – Continued on next page

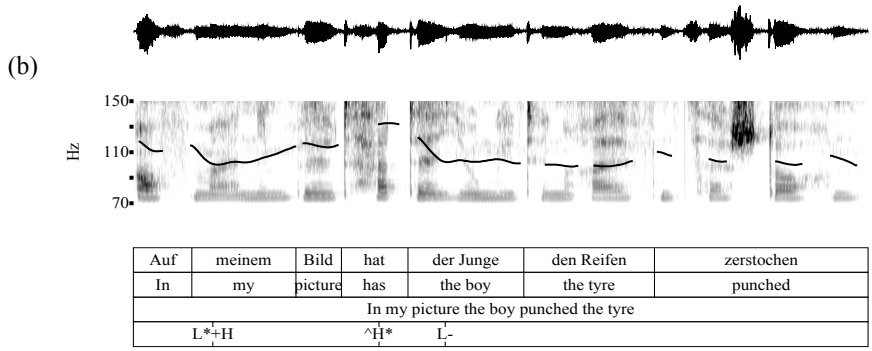


Figure 3.4(a)-(b): Example pitch tracks of an utterance (panel (a), male speaker) with unaccented auxiliary (i.e., *hat*) and accented object noun (i.e., *die Zeitung*) produced in non-polarity contrast condition and of Verum focus (panel (b), male speaker) as a high-falling pitch accent on the auxiliary followed by an unaccented object noun (i.e., *den Reifen*) produced in polarity contrast condition. The GToBI annotations are shown in the last tier.

3.6 Discussion

In German, the intonational realizations in non-polarity contrast and polarity contrast conditions were very systematic and – at least as accent placement was concerned – fairly consistent with our predictions derived from previous studies. More specifically, in non-polarity contrast condition, the auxiliary was generally unaccented and the nuclear accent was produced on the object noun, which is assumed to be the default location for broad focus cases (e.g., Uhmann, 1991; Truckenbrodt, 2012, sections 1.2.1.1 and 3.2). The most frequent accentual realization produced on the object noun had a medial peak followed by

a low phrase accent (i.e., H* L-). However, we found only few downstepped accents (i.e., !H*), far fewer than in other studies comparing broad and narrow focus realizations. It is conceivable that downstepped nuclear accents are more frequent in reading tasks than in more engaging dialogue tasks (e.g., Baumann et al., 2006; Féry & Kügler, 2008). If this assumption were correct, then downstep would not only be influenced by focus condition, but also by the degree of interaction (i.e., read speech vs. conversational setting). An alternative explanation for the surprisingly few downstepped accents is that the non-polarity contrast condition tested here were information-structurally more complex than broad focus conditions tested in other studies, due to the additional contrast on the topic location in the preverbal field. What also surprised us was that the subject noun was realized with a pitch accent in more than 75% of the non-polarity contrast cases (i.e., H*, L*, L+H*, L*+H), although it was clearly given (both visually and auditorily). It is likely that the accent on the subject noun was placed for rhythmic reasons, avoiding a long sequence of unaccented material between the pitch accent realized on the contrastive topic *Auf meinem Bild* and the pitch accent on the object noun (Büring, 2006, 2007). Such rhythmic accents are only legitimate before the nucleus. It therefore is not surprising that the subject noun was generally left unaccented in polarity contrast condition, where it followed the nuclear accent on the auxiliary. The results on the pitch accented subject noun in non-polarity contrast suggest that clear correspondences between activation states and pitch accent types are more meaningful for nuclear accents.

More important for our investigation is the phonological representation of Verum focus in polarity contrast condition: our German speakers typically realized a high-falling nuclear contour on the auxiliary *hat* (i.e., with the medial peak H*), followed by

unaccented postfocal elements (i.e., subject noun, object noun and non-finite verb). The preference for the medial peak accent in polarity contrast condition is in line with previous studies on narrow focus marking in German (e.g., Baumann et al., 2006; Féry & Kügler, 2008). In the majority of the cases the postfocal elements were indeed unaccented. This postfocal deaccentuation is typical for other languages including German (e.g., Xu & Xu, 2005 for English; Baumann, 2006; Féry & Kügler, 2008). Finally, hat patterns were very rare in our data, replicating the observation by Braun (2006) in a more interactive speech style. The few instances that were produced do therefore not allow us to make strong claims about the phonological structure of this contour in German. The only commonality was the realization of an L*+H prenuclear accent on the possessive pronoun.

From an information structure viewpoint, the experiment also confirmed previous proposals on the interaction between focus on the assertion, finiteness and accent placement (cf. Klein, 2006; Lohnstein & Blühdorn, 2012, section 1.1.3). In order to find out whether such a relationship also holds in languages other than German, the experiment was carried out with French speakers.

3.7 Basics of French intonational phonology

3.7.1 Phrasing and accent patterns

We mainly rely on the description of French intonation in the Autosegmental-metrical framework proposed by Jun and Fougeron (2000, 2002). Other models are taken into

account when discussing phonological aspects of French focus marking (e.g., Di Cristo, 1999b, 2000).

There is general agreement that French has two levels of prosodic phrasing: the intonational phrase is the highest level and includes one or more accentual phrases (APs). More recently, an intermediate level of phrasing has also been attested, coinciding with major syntactic boundaries, that is, between a complex subject noun and the verb (see Michelas & D'Imperio, 2012). Typically, an AP comprises a content word, optionally preceded by one or more function words. In French, this phrasal unit represents the domain of stress.

A typical tonal realization of an AP is featured as /LHiLH*/ in the French Autosegmental-metrical model we adopt here (Jun & Fougeron, 2000, 2002), containing both the initial rise (LHi) and the final rise (LH*, see sections 1.2.1.2 and 3.1). This tonal realization corresponds to the "bridge accent",[40] as described in other models of French intonation (i.e., *arc accentuel*, e.g., Di Cristo, 1999b, 2000). Depending on rhythmic constraints, each of the tones can be undershot. Authors further agree upon the fact that this pattern is dictated by structural rules (i.e., a "prosodic bipolarization", Di Cristo, 2000): initial (Hi) and final (H*) accents contribute to the rhythmic organization of the accentual phrase (i.e., rhythmic function) and signal the beginning and the end of this unit (i.e., demarcative function). Moreover, as we shall see in more detail below, the initial accent and/or the final accent can function as locus of the focal/emphatic accent (see also sections 1.2.1.2 and 3.1). In the Autosegmental-metrical model adopted here, the final

[40] Note that the French bridge accent should not be confused with the German bridge accent/hat pattern.

accent is treated as a pitch accent since this accent is consistently associated with the last full syllable of the AP content word (or with a function word if phrase-final); whereas the initial accent is regarded as a phrase accent because its temporal alignment shows no evidence of a stable association to a specific syllable (for experimental evidence, see Welby, 2006). Note that the status of the initial accent is a matter of dispute.

While the acoustic properties and the role of the final accent are largely uncontroversial, factors influencing the occurrence of the initial accent are still under debate. There is evidence suggesting that performance-related factors (e.g., speaking rate, speaker idiosyncrasies), structural factors (e.g., utterance position, length of the AP, syntax) and pragmatic factors (e.g., alignment between AP and focus) all affect the presence of the initial accent and thus the accentual realization of an AP.[41]

One of the most well-documented constraints on the occurrence of the initial accent is the duration and the number of syllables of the AP (e.g., being more frequent in APs made of 3 and 4 content word syllables, Jun & Fougeron, 2002; Welby, 2006). For example, in 2-syllable APs (or, in fast speaking rate conditions), the full pattern LHiLH* can be undershot and give rise to other tonal realizations, which we illustrate in Table 3.5 (tonal patterns that are not realized due to undershoot are printed in square brackets).

[41] We mention here only a few of the studies investigating factors influencing the occurrence of the initial accent in French: speaking rate (Welby, 2006), speaker idiosyncrasies (Pasdeloup, 1990), syntactic constituency (Astésano, Bard, & Turk, 2007), information structure (German & D'Imperio, 2010).

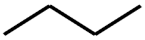
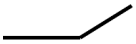
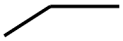
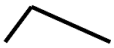
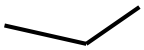
Tonal patterns	Schematic contours
LHiLH*	
a. L[HiL]H*	
b. L[Hi]LH*	
c. LHi[L]H*	
d. [L]HiLH*	
e. LHiL[H*]	
f. [LHi]LH* > L2H*	

Table 3.5: Schematic *f0*-contours of the default tonal pattern LHiLH* and its variants. Square brackets indicate undershot tonal targets (adapted from Jun & Fougeron, 2000, 2002; Welby, 2006).

Recently, German and D'Imperio (2010) showed that the occurrence of the initial accent can also be due to pragmatic factors like focus marking, over and above an effect of AP length (see also Beyssade, Hemforth, Marandin, & Portes, 2010). More specifically, the authors investigated whether initial accents occur more often at the left-edge of focused than unfocused APs in interrogatives. They reported that the occurrence of the initial accent is linked to information structural boundaries (i.e., more initial accents at the start of a focus domain).

Even more relevant to our interest is the relation between the morphological status of the word and the occurrence of the initial accent. A few investigations (e.g., Welby, 2006) have shown that the initial accent is typically realized on (one of) the first syllables

of the AP content word, but not on monosyllabic function words (*mots non accentogènes*, Garde, 1968), which are usually proclitized to the following noun (see, for instance, Delais-Roussarie, 1999, section 1.2.2.3). For instance, according to Jun and Fougeron's model (2002), the tonal pattern HiLH* (*d* in Table 3.5), with the undershot initial elbow (L), should be realized with APs starting with a content word (see also Welby, 2003).[42]

3.7.2 Intonational marking of focus

The notion of emphatic/focal accent in French is controversial. First, it is very often confounded with the initial (rhythmic) accent (Hi), possibly because of its placement on one of the first syllables of the AP content word. Furthermore, what makes this notion so complex is the fact that authors assume the existence of more than one type of emphatic/focal accent: the "intensifying" accent (i.e., highlighting a word at the syntagmatic level, that is, relative to other words in the utterance) and the "contrastive" accent (i.e., highlighting a word on a paradigmatic dimension, relative to a limited set of alternatives, Di Cristo, 1999b, 2000). As a matter of fact, such a distinction has not been supported by experimental investigations (e.g., Touati, 1987). Therefore, we shall adopt the general notion of focal accent previously observed in French contrastive contexts (e.g., Touati, 1987; Di Cristo, 1998; Jun & Fougeron, 2000, see sections 1.2.1.2 and 3.1).[43]

[42] Note that a function word can get an initial accent if disyllabic, or in cases of APs containing a long sequence of unstressed function words in a row (e.g., Delais-Roussarie, 1995; Jun & Fougeron, 2002).
[43] Also called "accent of focalization" (Rossi, 1993), or "emphatic initial accent" (Di Cristo, 2000).

CHAPTER 3

Many studies on French focus marking have shown that an SVO utterance in a contrastive focus context can have a different level of phrasing and/or tonal realization than the same utterance spoken in a broad focus context. More specifically, in broad focus SVO utterances, initial and medial APs are typically realized with the default pattern /LHiLH*/, AP length permitting (section 3.7.1). In contrastive focus contexts, the focused constituent is realized with the focal accent variably located on the initial and/or the final accent (e.g., Garde, 1968; Séguinot, 1976; Fónagy, 1980), mainly depending on speaker's choice (e.g., Dahan & Bernard, 1996; Jun & Fougeron, 2000). The focal accent is characterized by extra-pitch prominence, longer syllable duration and an increase in intensity (e.g., Dahan & Bernard, 1996; Rossi, 1999; Jun & Fougeron, 2000; Dohen, Loevenbruck, Cathiard, & Schwartz, 2004). Also, it can be occasionally preceded and/or followed by a pause (e.g., Séguinot, 1976; Dahan & Bernard, 1996; Féry, 2001). The postfocal region is deaccented (e.g., Di Cristo, 1998; Jun & Fougeron, 2000; Delais-Roussarie, Rialland, Doetjes, & Marandin, 2002). The prefocal region is realized with a compressed pitch range and its last full syllable is lengthened, suggesting the presence of an intermediate phrase break before the focal domain (cf. Dohen & Loevenbruck, 2004).

Thus, most of the studies on French focus marking have investigated acoustic correlates of the focal accent or observed its variable location within focused APs (e.g., Dahan & Bernard, 1996; Jun & Fougeron, 2000; Dohen & Loevenbruck, 2004). These observations were mainly conducted in read speech (e.g., Dahan & Bernard, 1996; Jun & Fougeron, 2000; Féry, 2001), which may differ from more spontaneous speech styles (cf. Grice, Savino, & Refice, 1997). Furthermore, previous work has always tested cases of contrastive focus on content words. It is possible that under certain circumstances (i.e.,

the contexts we investigate here) French speakers realize a focal accent on monosyllabic proclitics (cf. Di Cristo, 1999b, 2000), even though these elements are considered as non-accentable for rhythmic reasons (section 3.7.1). This proposal, however, has never been tested with non-phrase-final focused and monosyllabic auxiliaries. Hence, we investigate whether or not the focal accent is produced on monosyllabic auxiliaries and if so, how its presence modifies the tonal pattern of the verb phrase. Extending the investigation to other types of foci will provide a more complete picture on the interaction between pragmatic and structural constraints in French. The starting point of our investigation on French will be the above mentioned proposal on the relationship between focus on the assertion, finiteness and accentuation (cf. Klein, 2006; Lohnstein, 2012, section 1.1.3).

3.8 Experiment 2: Picture-difference task in French

We replicated Experiment 1 with French participants (section 1.5), using the same procedure and comparable material. Context negation utterances spoken by the French confederate speaker in polarity contrast condition are listed in Appendix A.

3.8.1 Participants

Eight French native speakers (2 male and 6 female, average age = 29.6 years, *SD* = 2.1) were recorded. They were students at the University of Paris VIII or researchers at the *Centre National de la Recherche Scientifique* (CNRS) in Paris. The participants originated from different parts of France and had been living in Paris at the time when they took part in the experiment. None of them had learned a language other than French

before the age of 10. Furthermore, none of them had a reported history of speech/language impairment or other developmental deficits. They all received a small fee for their participation.

3.8.2 Materials

The experimental conditions were identical to those in the German production study. Again, we compared identical utterances elicited in different context conditions, here the B-utterances in (46) and (47).

(46) A: *Sur mon image l' enfant n' a pas déchiré le billet.*
On my picture the child NEG has NEG torn the banknote
("In my picture the child did not tear the banknote")
B: *Sur mon image l' enfant a déchiré le billet.*
On my picture the child has torn the banknote
("In my picture the child torn the banknote")

(47) A: *Sur mon image le facteur a livré un colis.*
On my picture the postman has delivered a package
("In my picture the postman delivered a package")
B: *Sur mon image le facteur a déchiré un journal.*
On my picture the postman has torn a newspaper
("In my picture the postman torn a newspaper")

In non-polarity contrast condition the French confederate speaker (section 1.5) mostly produced the utterance in three APs: the utterance-initial prepositional phrase, the subject noun, and the verb phrase. Only rarely, when the object was long, it was phrased separately, resulting in four APs. All APs were realized with the LHiLH* default pattern or with its allophonic variants (depending on the AP number of syllables). The same held for the polarity contrast condition, with the exception of the verb phrase in which a focal accent was realized on the negation particle *ne…PAS* (e.g., LHfL%).

Finally, in all target trials the auxiliary was expressed with the monosyllabic *a* ("has") followed by disyllabic and trisyllabic non-finite verbs.

3.8.3 Procedure

The French group was tested in a quiet rom at the Department *Structures Formelles du Langage* UMR 7023 (CNRS) in Paris.

3.8.4 Research questions and predictions

Since Verum focus is generally understood as an accent on the finite verb, our primary question is whether French speakers produce a focal accent on the auxiliary in polarity contrast condition. We predicted that if the interaction between focus on the assertion, finiteness and accent placement put forward for German (Klein, 2006; Lohnstein, 2012) applied to French too, French speakers would place a focal accent on the auxiliary in polarity contrast condition but not in non-polarity contrast condition, resulting in a phonological distinction between the two contexts.

On the other hand, if such an interaction does not apply or is weighted less strongly than structural constraints that disallow accented monosyllabic auxiliaries in AP-initial position, we expect the realization of an initial accent on one of the first syllables of the non-finite verb. In principle, an initial accent on the non-finite verb could occur in polarity contrast and non-polarity contrast cases alike, given that the focal domain starts at the auxiliary in both contexts. In other word, the auxiliary is located at the left-edge of a focused AP in both contexts (cf. German & D'Imperio, 2010). We test *whether* in cases with an initial accent on the non-finite verb, speakers realize a focal accent to distinguish polarity contrast from non-polarity contrast contexts and if so, *where* they locate it (i.e., on the initial and/or on the final accent). Our focus is hence on the prosodic realization of the verb construction (i.e., the auxiliary verb followed by non-finite verb).

3.9 Data selection

For the French dataset, the 192 productions were coded on the phrase (AP), word and syllable level using Praat (Boersma & Weenink, 2012). We discarded 33 non-polarity contrast utterances in which participants produced pauses within phrases, hesitations or disfluencies; 29 non-polarity contrast and 12 polarity contrast utterances with different tenses or aspects (e.g., use of the aspectual construction *être en train de*) and 15 polarity contrast utterances with a verb different from that of the confederate. This left 34 non-polarity contrast and 69 polarity contrast cases for analysis. The utterances were analyzed and labeled using the model described in Jun and Fougeron (2000, 2002) for French (section 1.5). With the same procedure as the German data, a random sample of forty

percent of the French dataset was also annotated by another transcriber to compute interrater reliability scores.

3.10 Results

The interrater reliability score for the verb construction had a Kappa Coefficient of Agreement of 0.93 (*SD* = 0.04). For the object noun, Kappa was 0.79 (*SD* = 0.11). Both values signal a high level of agreement (Landis & Koch, 1977).

On the basis of previous studies reporting the presence of initial accents on the left-edge of focused APs (German & D'Imperio, 2010), we investigated their occurrence in both conditions. Furthermore, we tested whether their location (i.e., on the auxiliary or on one of the first syllables of the non-finite verb) is influenced by pragmatic condition (non-polarity contrast vs. polarity contrast). For the identification of initial accents, we largely followed the criteria defined by German and D'Imperio (2010).

When initial accents were realized on the auxiliary, they were either followed by a final high accent (transcribed as HiLH*) or by a final low accent (i.e., HiLL*), both realized on the last syllable of the non-finite verb.

Initial accents on the non-finite verb generally had a peak on one of its first two syllables. In verb phrases with disyllabic non-finite verbs (e.g., *vidé*), the initial accents were located on the first syllable of the non-finite verb. In trisyllabic non-finite verbs (e.g., *réveillé*), the initial accents were either located on the first (*n* = 16) or second syllable (*n* = 12). Table 3.6 displays the averaged distribution of initial accents on the auxiliary, on one of the first two syllables of the non-finite verb and cases with no initial accent on the auxiliary or on the first syllables of the non-finite verb across contexts.

Initial Accents (Hi)	Non-polarity contrast		Polarity contrast	
	M	*SD*	*M*	*SD*
auxiliary	0.0	0.0	27.9	33.1
non-finite verb	35.3	15.4	46.9	31.4
none	64.7	15.4	25.2	18.9

Table 3.6: The averaged distribution in % (over speakers) and the standard deviation of initial accents realized on the auxiliary *a*, on the first syllables of the non-finite verb, and of no initial accent on any of these two syllable landmarks, across non-polarity contrast and polarity contrast condition.

In Table 3.6 we can observe that initial accents on the auxiliary were realized only in polarity contrast condition. We tested whether this effect of condition was reliable over and above speaker specific preferences (e.g., Dahan & Bernard, 1996) and AP length (e.g., Jun & Fougeron, 2000, 2002; Welby, 2006). To this end, we calculated a binomial logistic regression model (Pinheiro & Bates, 2000; Baayen, 2008) with AUXILIARY HI as dependent variable (the first row of the Table 3.6 was coded as "Yes" and the remaining rows coded as "No"), CONDITION (non-polarity contrast, polarity contrast) and NUMBER OF SYLLABLES of the verb construction (3-syllable, 4-syllable) as predictors. Finally, SPEAKER and ITEM were added as crossed-random factors (allowing for speaker- and item-specific intercepts and slopes, see Cunnings, 2012; Barr et al., 2013).[44] The model revealed that there was a significant effect of CONDITION (ß = 3.70, *SE* = 1.2, $p < .001$), but no effect of NUMBER OF SYLLABLES ($p = .9$), and no interaction ($p = .9$). Thus, the

[44] For the reasons explained in footnote 34, we replaced one instance of non-polarity contrast utterance without initial rise on the FW with a "Yes" (Braun & Chen, 2010).

analysis confirms that French speakers realize an initial accent on the auxiliary in polarity contrast condition.

In what follows, we will investigate the accent patterns produced on the verb construction in the two conditions in more detail. Table 3.7 shows their distribution.

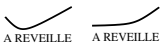
Initial accent	Verb construction contours	Non-polarity contrast (%)	Polarity contrast (%)	Contour
auxiliary	HiLH* / HiLL*	0.0 / 0.0	27.6 / 5.7	
non-finite verb	LHiL* / LHi	0.0 / 0.0	11.6 / 4.3	
	LHiH*/ LHiLH*	29.3 / 6.0	17.4 / 8.7	
none	LH* / LLH*	41.2 / 23.5	20.3 / 4.4	

Table 3.7: Relative frequency (%) of accent patterns (second column from the left) realized on the auxiliary plus the non-finite verb across non-polarity and polarity contrast condition, with respective schematic contours aligned with a text example /*a réveillé*/ - "has woken up" (adapted from, Jun & Fougeron, 2000, 2002). Accent patterns are grouped according to the presence of initial accents realized on the auxiliary *a*, on the first syllables of the non-finite verb, and of no initial accent on any of these two syllable landmarks, across non-polarity contrast and polarity contrast condition. Percentage distributions of accent patterns are separated one another by the slash "/" symbol.

From Table 3.7 we notice that in 49.2% of the polarity contrast cases, French speakers distinguish the pragmatic difference from the left-edge of the verb construction by means of different accent patterns: In 33.3% of the cases they realized an initial accent on the monosyllabic auxiliary (i.e., HiLH*, HiLL*; see Figure 3.6 below for an example of HiLH* pattern) and in 15.9% of the cases, they produced an initial rise on one of the first syllables of the non-finite verb, without a subsequent high AP-final accent (i.e., LHiL*,

LHi). The remaining 50.8% of the polarity contrast cases appear to be marked with the same tonal realizations (i.e., LHiLH*, LHiH*, LLH*, LH*) as the non-polarity contrast cases. Results of a multinomial logistic regression analysis showed that compared to the occurrence of the default LHiLH*, all other accent patterns had the same distribution, (LH*: $p = .2$; LHiH*: $p = .4$); with the exception of LLH* ($\beta = -1.65$, $SE = 0.91$, $p = .06$) which appeared to be marginally more frequent in non-polarity contrast than in polarity contrast condition. As it stands, the analysis so far reveals that there is no effect of condition on the choice of the accent patterns LH*, LHiH*, LLH*, LHiLH*. In Figure 3.5(a) to (f) we show pitch track examples of some of the accent patterns observed in polarity contrast condition.

(a)

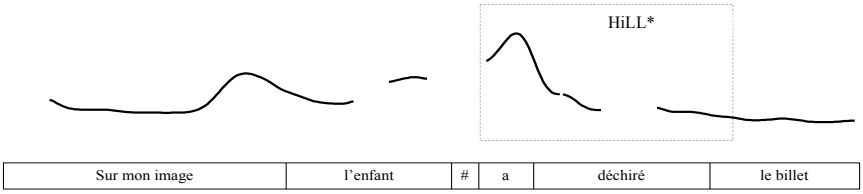
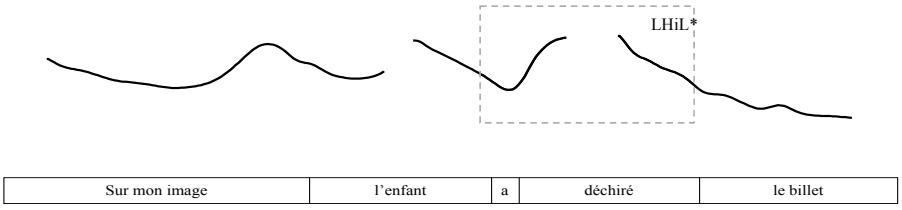
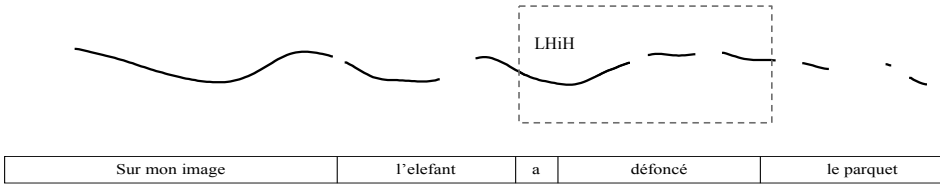


Figure 3.5(a)-(f) – Continued on next page

(b)



(c)



(d)

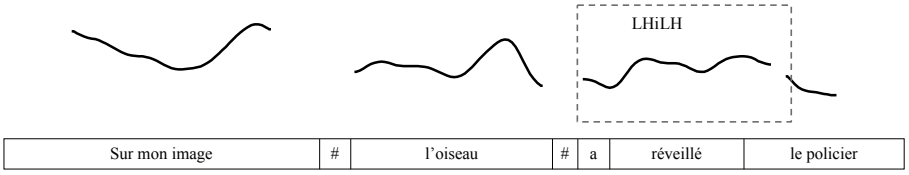
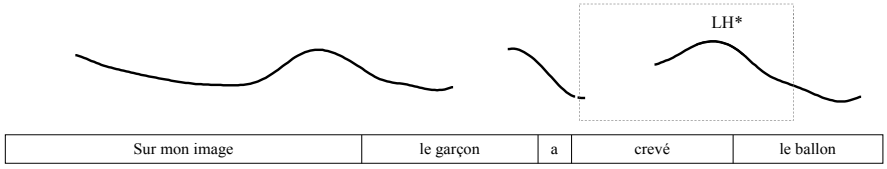


Figure 3.5(a)-(f) – Continued on next page

(e)



(f)

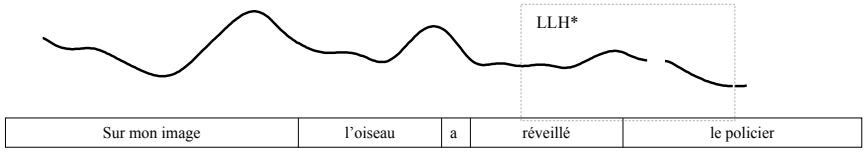


Figure 3.5(a)-(f): Some pitch track examples of the intonation contours observed in polarity contrast condition. The L2H* contour (see *f* in Table 3.5) is not attested on the verb constructions of the current data.

We now turn to the second research question of our investigation in French, *whether* the focal accent is located on the initial and/or on the final accent in those tonal patterns containing both high accents (i.e., HiLH*, LHiH*, LHiLH*). We first investigated the HiLH accent pattern, which occurred in polarity contrast condition only. An indication for a focal accent on the initial accent is that its peak is higher than the peak in the final accent (e.g., Dahan & Bernard, 1996; Jun & Fougeron, 2000; Dohen & Loevenbruck, 2004). In our HiLH* cases, the peak of the initial accent was on higher

than the peak of the final accent. Hence, we computed the semitone difference between the height of the peak of the initial accent on the auxiliary (H1 in Hz) and the height of the peak of the final accent of the last syllable on the non-finite verb (H2 in Hz).[45] A one-sample *t*-test confirmed that the semitone difference between both high accents was significantly different from zero, $t(20) = 5.15$, $p < .0001$, with an average semitone difference of 1.8. This semitone difference of 1.8 suggests that the focal accent was realized on the initial accent. An example of focal accent realized on the initial accent is shown in Figure 3.6.

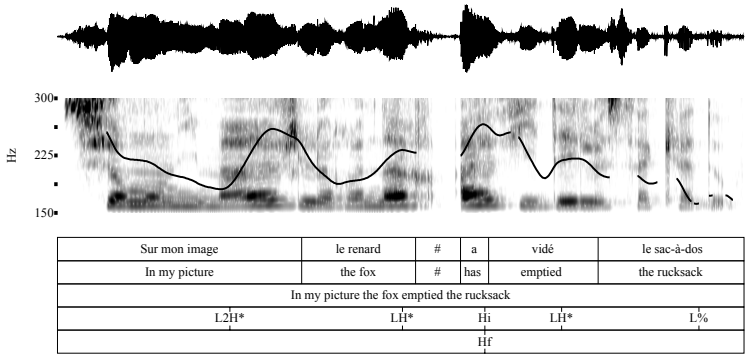


Figure 3.6 Example pitch track of Verum focus (in polarity contrast condition) with a focal accent on the auxiliary *a* in HiLH* accent pattern. The example is spoken by a female French speaker. Annotations shown on the fourth tier are based on Jun and Fougeron's labeling criteria (2000, 2002).

[45] Following Nolan (2003), the semitone difference was calculated as 12(log2 H1 - log2 H2).

Next, we extended our analysis to LHiLH*, LHiH*, that is, to two-peak accent patterns that were realized in non-polarity contrast and polarity contrast contexts, to investigate whether condition affects fine phonetic detail in accent realization. To this end, we calculated the semitone difference between the height of the peak of the initial accent, realized on one of the first syllables of the non-finite verb (H1 in Hz), and the height of the peak of the final accent, realized on the last syllable of the non-finite verb (H2 in Hz), and subjected it to a linear mixed effect regression model (Baayen, 2008) with TONAL SCALING as function of CONDITION (non-polarity contrast, polarity contrast) and NUMBER OF SYLLABLES between the two peaks. Results showed that there was a significant main effect of CONDITION (ß = -1.04, *SE* = 0.22, $p < .0001$), no effect of NUMBER OF SYLLABLES ($p = .2$) and no interaction of the control variable with condition ($p = .5$): while the final accent was higher than the initial one in non-polarity contrast condition, the two peaks were equally high in polarity contrast contexts (see Figure 3.7). Hence in non-polarity contrast condition, which is not expected to attract a focal accent, the final accent is realized with a higher peak than the initial accent.

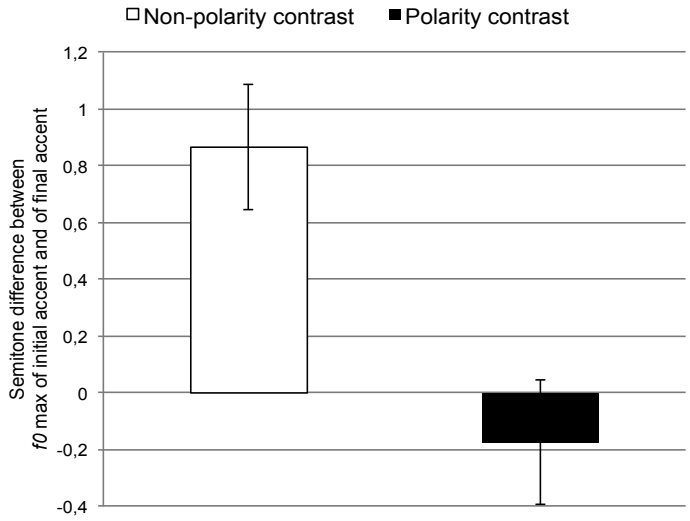


Figure 3.7 Semitone difference between *f0*-maximum of the initial accent and of the final accent, ΔST = 12(log2 H1 - log2 H2), in accent patterns with an initial accent on the non-finite verb (i.e., LHiLH, LHiH) across non-polarity contrast and polarity contrast conditions. Mean values are based on the statistical model and whiskers represent standard error. Positive values indicate that the final accent is higher than the initial accent.

We finally present the accentual patterns realized on the object noun across both contexts. The averaged distribution of deaccented postfocal constituents is reported in Table 3.8.

Accent patterns on the object noun	Non-polarity contrast		Polarity contrast	
	M	*SD*	*M*	*SD*
HiLL%	38.4	39.5	2.2	4.0
LHiL%	57.5	36.2	4.1	5.7
unaccented	4.1	10.8	93.7	7.2

Table 3.8: The averaged distribution in % (over speakers) and the standard deviation of accent patterns on the object noun across non-polarity contrast and polarity contrast condition.

The multinomial logistic regression analysis with ACCENT PATTERN (listed in Table 3.8) as the dependent variable and CONDITION as the fixed factor (HiLL% was the reference category) revealed significantly less unaccented object nouns in non-polarity contrast than in polarity contrast condition (ß = -5.19, SE = 1.04, $p < .0001$). Other accentual patterns did not differ significantly according to condition (all p-values > .8). This corroborates previous findings that report deaccentuation of postfocal APs (e.g., Jun & Fougeron, 2000; Delais-Roussarie et al., 2002; Dohen & Loevenbruck, 2004).

3.11 Discussion

The semi-spontaneous productions elicited with French speakers revealed that in half of the cases, polarity contrast is phonologically distinct from non-polarity contrast cases, given the exclusive occurrence of the accent patterns HiLH*, HiLL*, LHiL*, LHi in polarity contrast contexts. In the other half of the cases, there was no phonological

difference across conditions; the accent patterns LH*, LHiLH*, LLH*, LHiH* occurred equally often on the verb construction in non-polarity contrast and polarity contrast contexts.

We will first direct our attention to the phonological distinction across pragmatic conditions, which lend some support to a direct relation between pragmatic focus and (focal) accent location. In particular, it was found that two of the patterns have never been documented before (i.e., HiLH* and HiLL*). Conceivably, the occurrence of HiLH* and HiLL* can be attributed to our specific materials (i.e., APs consisting of function and content words compared to APs consisting of content words only, see Jun & Fougeron, 2000, 2002; Welby, 2003). Acoustic analyses showed that for the HiLH* pattern, the height of the initial accent placed on the auxiliary was significantly higher than the peak of the AP-final accent realized on the last syllable of the non-finite verb. This provides evidence for the presence of a focal accent on the Hi. With the help of more controlled production data, future studies will have to address the phonological issue of whether in these specific cases the Hi is promoted to a pitch accent (cf. Jun & Fougeron, 2000, section 1.2.1.2). Taken together, our findings indicate that to some extent French speakers can accent focused auxiliaries for assertion validation purposes, contrary to what reported in Dimroth et al. (2010).

In the other half of the cases, speakers produced accent patterns (on the verb construction) that occurred equally often in non-polarity contrast and polarity contrast contexts (i.e., LHiLH*, LHiH*, LLH*, LH*). This phonological view, however, hides some more interesting phonetic differences across conditions. An analysis of peak height differences between initial and final accents suggests that in non-polarity contrast

contexts the focal accent is realized on the final accents rather than on the initial accent (higher peaks on final accent compared to the initial one), whereas in polarity contrast, both accents have equal scaling. No matter how the non-polarity contrast peak scaling differences are interpreted, the polarity contrast peak scaling gives more emphasis to the initial than to the final accent (compared to peak scaling in non-polarity contrast). On the other hand, there might not be a focal accent in these polarity contrast contexts at all, given that the peak scaling differences in the accent patterns that occurred exclusively in polarity contrast condition (i.e., HiLH*, HiLL*, LHiL*) were considerably larger. Hence, whenever there is no focal accent mediating the relationship between focus on the assertion and finiteness, assertion validation is realized by scaling down the generally high pitch on the final accent. We are looking forward to investigating this issue in more detail in future studies.

Not surprisingly, the object noun following the verb construction was mostly unaccented in polarity contrast condition but not in non-polarity contrast condition (e.g., Jun & Fougeron, 2000). This clear difference across pragmatic conditions shows that the pragmatic manipulation in the experiment was successful. From a perceptual point of view, the information structure might be decoded at the latest when processing the object noun. The presence of phonological and phonetic cues to disambiguation at the verb construction, however, suggests that listeners would be able to arrive at the correct information structural interpretation already during the verb construction (e.g., for the use of fine phonetic detail during online speech comprehension, see Dahan, Tanenhaus, & Chambers, 2002; Salverda & Tanenhaus, 2010). Future studies will have to investigate

whether the probabilistic cues to information structure in the verb construction can indeed be used by French listeners.

3.12 Conclusion and future work

In this chapter we investigated Verum focus in German and in French polarity contrast contexts. Specifically, we tested how intonation marks the relation between focus on the assertion, finiteness and accentuation with utterances containing monosyllabic auxiliaries (phonologically weak forms). Going one step further, we also touched upon more specific issues regarding the phonology of these two languages.

The first part of the investigation conducted on German (Experiment 1) confirmed previous proposals on the relationship between assertion, finiteness and accent placement (cf. Klein, 1998, 2006; Lohnstein, 2012). The functional importance that finite elements play in Germanic languages (cf. Bernini, 2009; Dimroth et al., 2010) is signaled by a systematic accentual prominence on the finite verb. Compared to cases where the auxiliary is by default unaccented (i.e., non-polarity contrast condition), in polarity contrast contexts German speakers typically produced a high-falling nuclear contour on the auxiliary *hat* (i.e., Verum focus), followed by deaccented material. Phonologically speaking, in terms of accent placement and accent type, the intonational realizations were quite consistent with previous studies on focus marking in German (e.g., Baumann et al., 2006; Féry & Kügler, 2008). Beside that, German speakers encoded polarity contrast with the hat pattern contour, whose presence in more spontaneous speech was attested for the first time in the present investigation. However, these contours were only rarely produced. Even though this tonal pattern has been argued to facilitate the production of

accents in close succession (Levelt, 1989 for Dutch), our German speakers chose to phrase both contrasts (i.e., on the topic and on the assertion component) separately in the majority of the cases. A further aspect that deserves attention is the presence of "ornamental accents" (Büring, 2006, 2007) on the contextually given subject nouns, which were probably realized due to rhythmic organization principles. As a side remark, it is interesting to notice that even in a language like German, where there seems to be a strong relation between intonation and information structure, structural/rhythmic principles can outweigh pragmatic aspects (i.e., the activation status of referents, see, for instance, Baumann & Grice, 2006, section 1.1.1), at least in prenuclear position.

The interaction between structural and pragmatic factors was also observed in French (Experiment 2). In this language, phrasing and tonal constraints might work against Verum focus as a focal accent on the monosyllabic auxiliary. In order to associate the focal accent with the auxiliary, the default tonal pattern of the accentual phrase (i.e., LHiLH*) has to be phonologically restructured and constraints against placing initial accents on non-phrase-final monosyllabic function words outweighed. Our findings indeed show that in 33.3% of the Verum focus cases the auxiliary was realized with a (previously undocumented) focal accent. In another 15.9% of the cases, a focal accent was realized on one of the first syllables of the non-finite verb (i.e., LHiL*, LHi) with no following AP-final accent – again, these accent patterns only occurred in polarity contrast condition. Hence, in half of the cases, French speakers phonologically distinguished non-polarity contrast from polarity contrast cases on the verb construction.

Overall, if we compare the two languages in question, we get a clear understanding of Verum focus in German, whereas for French, the unsystematic

occurrence of the focal accent on the auxiliary and the wide range of intonational patterns realized within the targeted AP (including the finite and non-finite verb) open a new field for future work. As a preliminary conclusion, we think that the functional importance ascribed to finite elements in Germanic languages either may not be attributable to French, as suggested by recent cross-linguistics studies on Germanic and Romance languages (cf. Bernini, 2009; Dimroth et al., 2010), or simply does not surface due to phonological constraints of the auxiliary, which is a phonologically weak element. More data (also from online speech perception studies) are necessary to adjudicate between these two explanations. Pilot results from the phrasing of phonologically heavier auxiliaries (i.e., *avaient*, "(they) had") elicited in a reading production task showed not to differ from the current light auxiliaries presented in this study (i.e., *a*), which appears to lend support to the hypothesis of the functional importance: eight French speakers produced a focal initial accent the heavy auxiliary in 22% of the cases against 78% of the cases in which they realized an initial accent on the non-finite verb (see Appendix G).

Obviously, the current results have implications for second language acquisition (L2). Given the differential results for German and French Verum focus and widely attested effects of L1 prosodic *transfer* on L2 (e.g., Mennen, 2004; Rasier & Hiligsmann, 2007; Braun & Tagliapietra, 2011), Verum focus may result in a learnability problem for learners of both languages.

CHAPTER 4

4 EFFECTS OF TYPOLOGICAL DIFFERENCES ON *COMMON GROUND MANAGEMENT* IN SECOND LANGUAGE ACQUISITION[46]

4.1 Introduction

When learning a second language in adulthood, one needs to acquire the set of linguistic means that are necessary to express different functions in the appropriate pragmatic contexts. Assuming that information structure categories like topic and focus are universal and that the linguistic means to encode them are language-specific, adult learners can use their prior knowledge of these functions (but not necessarily their encoding) when acquiring an L2 (section 1.3). However, across languages, not all pragmatic functions are equally explicitly marked (cf. Matić & Wedgwood, 2013). One such case is polarity contrast. In this chapter we concentrate on the expression of affirmative polarity contrast by Italian native speakers and by advanced German and Dutch learners of L2 Italian. Recent empirical studies (Dimroth et al., 2010) and findings reported in Chapters 2 and 3 (Turco, Dimroth, & Braun, 2013; Turco, Braun, & Dimroth, 2013) suggest that polarity contrast plays a crucial role for common ground management

[46] A version of this chapter will appear as Turco, G., Dimroth, C. and Braun, B. (submitted) "Effects of typological differences on L2 common ground management". Part of this chapter has also appeared as Turco, G., Gubian M. and Schertz, J. (2011) "A quantitative investigation of the prosody of Verum focus in Italian". Proceedings of the 12th annual Interspeech conference, August 28-31, Florence (Italy).

(see General introduction) in Germanic languages (e.g., German, Dutch). It is probably not by accident that the grammar and the lexicon of Germanic languages provide speakers with a rich inventory of linguistic means to express polarity contrast (specifically, Verum focus and sentence-internal affirmative particles). Despite their typological relatedness, German and Dutch speakers differ in how they linguistically encode polarity contrast (Turco, Braun, et al., 2013, Chapter 2): while Dutch speakers overtly mark polarity contrast by producing *wel*, German speakers mostly produce Verum focus.

In the Romance languages Italian and French, on the other hand, highlighting the assertion and the polarity operators in the same contexts does not seem to be equally relevant (Dimroth et al., 2010; Turco, Dimroth, et al., 2013, Chapter 3). Evidence from free narrative productions (Dimroth et al., 2010) shows which preferences speakers have when given the free choice to organize the information flow in accordance with what is easy to express in their language (cf. von Stutterheim, 2003). Dimroth et al. (2010) found that Italian (much like French speakers) prefer to explicitly mark topic contrasts (section 1.2.2) but not polarity contrasts (as is done in Dutch or German). However, this does not imply that polarity contrast cannot be linguistically marked in Italian. Empirical evidence is necessary to understand what Italian speakers do in a more constraining situation, in which they are encouraged to draw the interlocutor's attention to a change in polarity. As shown in Chapter 3 (Turco, Dimroth, et al., 2013), in such a setting, French speakers have been shown to also produce Verum focus, albeit in only one third of the cases.

These typological differences beg the question of whether highly proficient non-native interlocutors manage the common ground in a target-like way (and if not, how they

deviate from the target language). In this chapter we investigate how L2 learners mark the information flow when information structure categories like polarity contrast, which play a crucial role for discourse organization in their L1, are not consistently encoded in their target language. To this end, we will first test whether Italian speakers mark polarity contrast by using the picture-difference task procedure (Experiment 1), a more controlled setting than in Dimroth et al. (2010), and if so, how they do it. Given that the intonation systems of Italian strongly vary across dialects (see D'Imperio, 2001 and references therein), we limit our investigation to one regional variety, the one spoken in Rome (henceforth Roman Italian, see section 1.5). Then, we test advanced German and Dutch learners of (Roman) Italian with the same procedure, to investigate learnability problems arising from cross-linguistic differences in polarity contrast marking (Experiment 2).

This chapter is organized as follows: section 4.2 presents our hypotheses for polarity contrast marking in Italian, on the basis of the studies reviewed in Chapter 1. In the empirical section we provide more specific information about the picture-difference task material (section 1.5) and the elicitation procedure (Experiment 1). The results of the data analyses are reported and discussed in sections 4.4 and 4.5. The second part of this chapter introduces our hypotheses on polarity marking in L2 (section 4.6), built on the basis of previous work on the L2 encoding of information structure (section 1.3). More details on the elicitation procedure adopted with the L2 learners are provided in section 4.8. Next, we present the comparative analyses between the learner data and the native speaker data and interpret the results in light of previous studies on information structure in L2 (see sections 4.9 and 4.10). Finally, we turn to the conclusions based on the main findings and discuss the impact of typological differences on L2 acquisition.

4.2 Hypotheses

Experiment 1 test how Roman Italian speakers mark polarity contrast in utterances with different verb types (i.e., lexical-items, auxiliary-items and copula-items verbs), concentrating on the use of intonation and lexical means (i.e., sentence-initial adverbs, sentence-internal particles or intensifiers, see sections 1.2.1.2 and 1.2.2.2).

Concerning intonation, so far the prosodic realization of focus in Italian has been mainly studied with lexically headed constituents, while there are no empirical studies on focused function words such as auxiliaries and copula verbs (section 1.2.2.2). Following previous proposals on the relation between focus on the assertion, finiteness and accentuation (cf. Klein, 1998, 2006; Lohnstein & Blühdorn, 2012), we test whether in contexts of polarity contrast, Italian speakers produce Verum focus and if so, whether this is marked in the same way across different verb conditions (section 1.5). No clear predictions regarding the use of sentence-initial adverbs and sentence-internal particles are possible at this point (section 1.2.2.2). We expect that speakers will use *invece* to mark the contrast, but this form is not expected to be specific to polarity contrast utterances, but would instead be used in other kinds of contrasts as well (Dimroth et al., 2010).

Dimroth et al.'s film-retelling study (2010) suggests that there is no Verum focus in Italian. We tested whether this is the case by using the same elicitation procedure adopted for French in Chapter 3 (Turco, Dimroth, et al., 2013), in which a few occurrences of Verum focus were attested. Regarding Italian, we see three likely outcomes:

1 First, Italian speakers do not produce nuclear accents on the finite verb (i.e., Verum focus) at all. This result would support the findings of Dimroth et al. (2010) that in contexts in which claims with opposite polarity apply to different topic situations, Italian speakers do not mark polarity contrasts. Such scenario would suggest, that the pragmatic constraint to accent focused words in these contexts does not hold for Italian.

2 Second, Verum focus may be realized on lexical verbs but not on auxiliary and copula verbs, since the latter are procliticized to the following lexical word and cannot receive an accent (e.g., Selkirk, 1995; Truckenbrodt, 1999, section 1.2.2.3). This result would support Selkirk's structural constraint (i.e., non-phrase-final and monosyllabic function words do not form prosodic constituents). Assuming that word status differences across finite verbs are true, it is conceivable that in split verb constructions, in which the finite verb is an auxiliary, speakers produce an accent on the non-finite verb instead, which is the phrasal head of the verb phrase (cf., Féry & Samek-Lodovici, 2006; Samek-Lodovici, 2006, see Appendix H for a syntactic tree representation).

3 Third, Verum focus is realized independent of the word status of the verb, supporting the hypothesis that focused function words can be realized with a pitch accent (Selkirk, 1995, section 1.2.2.3). In this scenario, the pragmatic constraint to accent focused words overrides possible structural constraints (i.e., scenario 2, see Appendix H for a syntactic tree representation).

In any case, we predicted that the nuclear contour on the finite verb would be realized as H* L- or as H*+L and followed by postnuclear accents (section 1.2.1.2).

4.3 Experiment 1: Picture-difference task in Italian

For the elicitation of polarity contrast utterances, we used the picture-difference task as described in section 1.5. Context negation utterances spoken by the Italian confederate speaker in polarity contrast condition are listed in Appendix A.

4.3.1 Participants

Fourteen Italian native speakers (4 males, 10 females, average age = 22.7 years, *SD* = 2.6) participated for a small fee. They were all students at the University *La Sapienza* and all originated from Rome (Italy). None of the tested speakers had learned a language other than their native language before the age of 10. Furthermore, none of them had a reported history of speech/language impairment or other developmental deficits.

4.3.2 Materials

The materials were the same as described in section 1.5.

For the research purposes of the present chapter, we will analyze the lexical-items containing a disyllabic verb (e.g., *mangia* "(s/he) eats"), the auxiliary-items comprising the monosyllabic auxiliary *ha* ("has") and the copula-items containing the monosyllabic copula verb *è* ("is").

Polarity contrast utterances spoken by the Italian confederate speaker were typically realized with a high-falling nuclear contour (i.e., H*+Ln L-) on the finite verb (i.e., *non MANgia*..., lit. (s/he) doesn't eat…, "(s/he) is not eating…").

4.3.3 Procedure

The procedure was the same as described in section 1.5. All sessions took place in an experiment room at the University *La Sapienza* in Rome (Italy).

4.4 Data selection

The 448 polarity contrast productions were coded on the prosodic phrase, word and syllable level using Praat (Boersma & Weenink, 2012). We discarded 148 utterances in which participants produced pauses within syntactic phrases, hesitations, disfluencies or produced verbs different from that of the confederate (e.g., with different tenses or aspects). This left 300 utterances for the analysis (103 utterances produced in lexical-items, 117 utterances produced in auxiliary-items, 80 utterances produced in copula-items).

For the tonal description of the utterances, we used the Autosegmental-metrical description for Italian intonation (Grice, D'Imperio, et al., 2005, section 1.5).

Finally, all statistical analyses were performed by using the R software package (2012).

4.5 Results

We analyzed polarity contrast marking cases versus unmarked cases (see Figure 4.1) produced in polarity contrast condition across all verb types. Our results are as follows. Cases with a linguistically marked polarity contrast comprised:

1 Verum focus (with and without following postnuclear accents).
2 Tonally marked utterances with a nuclear pitch accent on the non-finite verb (only possible in the auxiliary-items).
3 Sentence-internal particles (or intensifiers like *proprio*, etc., see section 1.2.2.2).
4 Sentence-initial adverbs (e.g., *sì* or *invece sì,* see section 1.2.2.2).
5 Unmarked cases comprised utterances realized with a nuclear pitch accent in default position (i.e., on the last complement of the utterance).

In Figure 4.1 we first present the relative frequency (%) of all these realizations.[47]

[47] The absolute frequency values of the results illustrated in Figure 4.1 and in all subsequent figures of this chapter are presented in Appendix E.

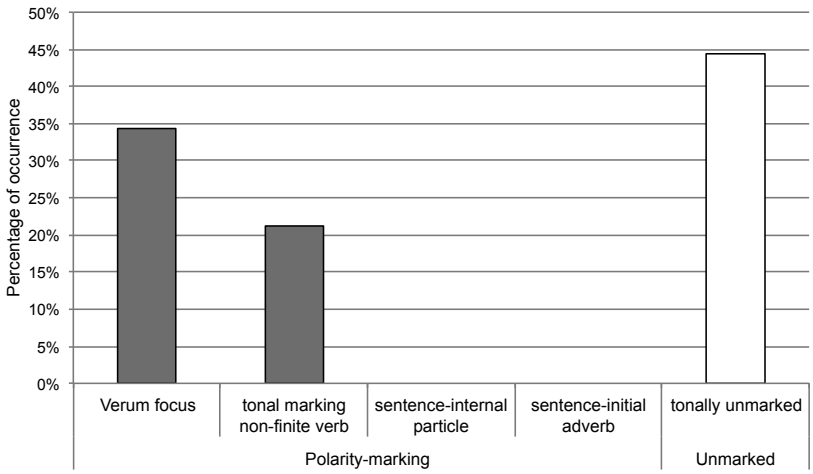


Figure 4.1: Polarity contrast condition – Relative frequency (%) of linguistic means to mark polarity contrast by Italian native speakers.

Figure 4.1 shows that Roman Italian speakers never used sentence-internal particles and sentence-initial adverbs to mark the polarity contrast. The most frequent realization of polarity contrast utterances was tonal marking: on the finite verb in about 34% (i.e., Verum focus, see Figure 4.3 below) and on the non-finite verb in more than 20% of the cases (see Appendix E). In the remaining cases speakers left the utterances tonally unmarked. Note that the unmarked cases also contained utterances with a sentence-initial adverb *invece* ("on the other hand", accounting for 10% of the cases); since this adverb was also realized in trials with no polarity-switch (see section 1.5), it cannot be specific to

polarity contrast contexts (cf. Dimroth et al., 2010); we therefore included it in the category unmarked.

As predicted, the tonal marking varied as a function of verb type, as illustrated in Figure 4.2.

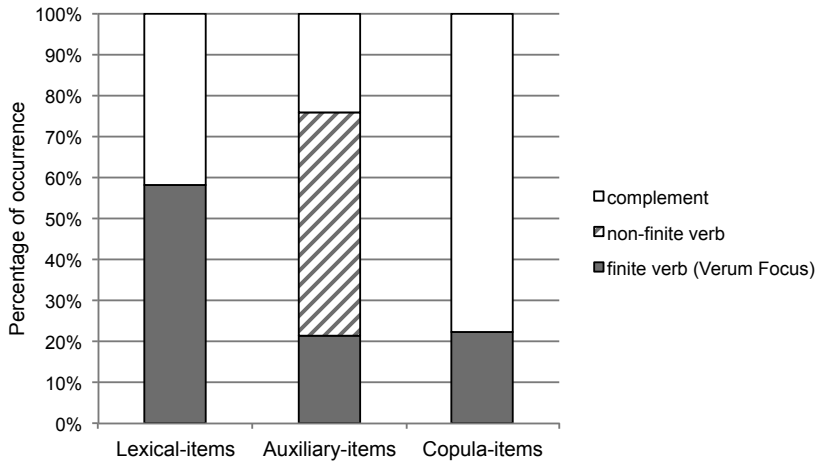


Figure 4.2: Verum focus: Relative frequency (%) of nuclear pitch accent placement broken down by verb type (lexical-items, auxiliary-items, copula-items).

Figure 4.2 demonstrates that nuclear pitch accent on the finite verb were mostly located on lexical verbs than auxiliary/copula verbs. To corroborate this observation, we ran a binomial logistic regression analysis (Pinheiro & Bates, 2000; Baayen, 2008) with VERUM FOCUS (Yes vs. No) as a function of VERB TYPE (lexical-items, auxiliary-items,

copula-items), adding SPEAKER and ITEM (specifically: speaker- and item-specific intercepts and slopes) as crossed-random factors (Cunnings, 2012; Barr et al., 2013). The model confirmed that, compared to the lexical-items, there were significantly fewer nuclear contours on the finite verb in the auxiliary-items (ß = -1.68, *SE* = 0.34, $p < .0001$), and in the copula-items (ß = -1.52, *SE* = 0.37, $p < .0001$), whereas the difference between the auxiliary-items and the copula-items was not significant ($p = .6$). Figure 4.3 illustrates an example of Verum focus on the auxiliary *ha*, followed by postnuclear accents on the non-finite verb and on the object noun.

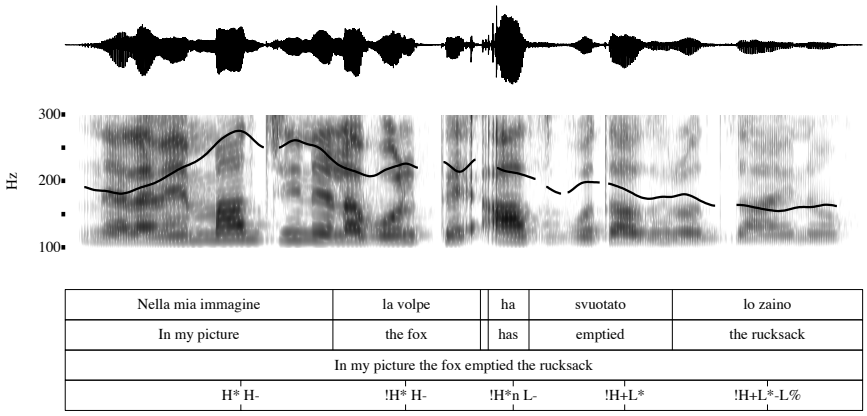


Figure 4.3: Example pitch track of Verum focus. The high-falling nuclear contour (i.e., H*n L-) on the auxiliary (*ha* "has") is followed by postnuclear accents on the non-finite verb (*svuotato* "emptied") and on the object noun (*lo zaino* "the rucksack"). The example is spoken by a female speaker. Annotations shown on the last tier are based on Grice et al.'s labeling criteria (2005).

In cases of Verum focus (i.e., grey bars in Figure 4.2) the finite verb was mostly realized with a high-falling nuclear accent (i.e., as H*+Ln in 8% and as H*n in 92% of the cases). This nuclear accent was followed by downstepped postnuclear accents in 79.2% of the cases (as !H* or as !H*+L or as L*) and by deaccentuation in 20.8% of the cases. The deaccented postfocal words were more frequent in lexical-items (accounting for 83.3% of the deaccented cases) than in auxiliary- and copula-items.

4.6 Discussion

In line with previous studies (Dimroth et al., 2010), we found that Italian native speakers neither produced sentence-initial nor sentence-internal lexical means (section 1.2.2.2). Obviously, this does not rule out the possibility that such lexical means are used in other syntactic configurations (i.e., with elliptical structures), other pragmatic contexts (e.g., corrections) and/or other regional varieties of Italian. We leave these issues open to future studies. On the other hand, our data showed that Italian speakers expressed polarity contrast mainly via intonation in more than 50% of the cases, a finding that was not reported in Dimroth et al.'s study (2010). These results show that if encouraged to mark polarity contrast in a constrained context, Italian speakers do mark it to some extent. More than 30% of the cases carried a pitch accent on the finite verb (i.e., Verum focus), whereas more than 20% of the cases carried it on the non-finite verb. In the remaining cases, speakers left such contexts unmarked and produced neither the aforementioned intonation contours nor lexical means (apart from *invece*, which was also found in contexts with no polarity-switch, section 1.5). The fact that speakers left many utterances unmarked does not imply however that they did not understand the task: speakers

produced definite nominal determiners to mark the identifiability of the DP: for instance, they produced *lo zaino* "the rucksack" in polarity contrast contexts and *uno zaino* "a rucksack" in contexts with no polarity-switch (e.g., Chafe, 1974; Lyons, 1999, section 1.1.1).

Having a closer look at Verum focus, nuclear pitch accents on the finite verb occurred less frequently on auxiliary and copula verbs than on lexical verbs. This finding is in line with our second scenario (section 4.2), based on focus projection theories, where the structural constraint that disallows accentuation of non-phrase-final monosyllabic function words overrides the pragmatic constraint that every focused word can receive a pitch accent (Selkirk, 1995, section 1.2.2.3). Furthermore, in the auxiliary-items, speakers often produced the nuclear pitch accent on the non-finite verb, the phrasal head of the verb phrase (cf. Féry & Samek-Lodovici, 2006; Samek-Lodovici, 2006). This strategy allowed speakers to locate the nuclear pitch accent on the focused constituent, while avoiding accenting the non-phrase-final monosyllabic auxiliary.

Finally, the analysis on the pitch accent types (H*n and H*+Ln, see section 1.2.2.2) confirmed previous observations on narrow/contrastive focus marking for Roman Italian (cf. Frascarelli, 2004) and revealed the (so far undocumented) presence of postnuclear accents also for this regional variety, as found elsewhere (e.g., Grice, D'Imperio, et al., 2005; Bocci & Avesani, 2011).

Our findings show that polarity contrast is expressed in Italian; yet much less consistently and in more diverse ways than in German and Dutch (Turco, Braun, et al., 2013, Chapter 2). From the perspective of a Germanic learner, polarity contrast happens rarely and inconsistently in Italian. The aim of the next experiment is to investigate

whether and how German and Dutch learners of L2 Italian encode this function, by examining their behavior with the same dialogue-game task procedure.

4.7 Implications for second language acquisition

Learning a language implies more than arranging grammatically correct sentences in a longer piece of discourse. Previous studies on the L2 acquisition of information structure marking in advanced learner varieties (e.g., Carroll & von Stutterheim, 2003; von Stutterheim & Carroll, 2005; Carroll & Lambert, 2006) have shown that even if learners become better at mastering the L2 linguistic means over time, they still have problems using those means in context, according to the discourse organizational principles of their target-language (section 1.3.2). Conceivably, if the grammar of the native language makes it easy to encode certain information structure distinctions, learners get used to the respective information structure categories rather rapidly. As a consequence, they may adopt the L2 means for building up a discourse that follows the L1 patterns of information flow (von Stutterheim, 2003). In this second study, we investigate the implications of the typological differences in polarity contrast marking. Polarity contrast provides an ideal test bed because, as results of Experiment 1 show, this pragmatic function is less frequently and less systematically expressed in Italian compared to German and Dutch (conveyed by Verum focus and affirmative particles, respectively, in more than 80% of the cases, Turco, Braun, et al., 2013, Chapter 2). Given these differences, what do German and Dutch learners of Italian do when encouraged to mark polarity contrast? Would they still manage the interlocutors' common ground in the same way they are used to from their L1?

CHAPTER 4

Effects of typological differences on the L2-encoding of information structure in advanced learners (section 1.3) have been investigated in other linguistic domains (i.e., temporality, space and referential movement, Carroll et al., 2000; Carroll & Lambert, 2006; Hendricks & Hickmann, 2011) or by looking at L1 prosodic transfer on form-to-function mapping (e.g., Kelm, 1987; McGory, 1997; Ueyama & Jun, 1998; Wennerstrom, 1998; Rasier & Hiligsmann, 2007; Nguyên, Ingram, & Pensalfini, 2008; Ploquin, 2009; O'Brien & Gut, 2010; Swerts & Zerbian, 2010; Zubizaretta & Nava, 2011; Turco & Gubian, 2012). Previous work has also shown that the phonetic implementation of identical phonological pitch contrasts can be affected by L1 transfer (e.g., Atterer & Ladd, 2004; Mennen, 2004; Gut, 2009). Mennen (2004), for instance, shows that highly advanced Dutch learners of L2 Greek aligned the peaks of the prenuclear rises considerably earlier than Greek native speakers, producing them more like Dutch prenuclear accents.

In the current study, we investigated transfer on three levels, the level of the pragmatic function, the level of the grammatical encoding, and the level of phonetic encoding of phonological contrasts. Given the consistent marking of polarity contrast in German and Dutch (Turco, Braun, et al., 2013, Chapter 2) compared to Italian speakers (Experiment 1), we predicted that Germanic learners will transfer the relevance of polarity contrast marking from their L1 (i.e., transfer of a pragmatic function). Furthermore, given previous studies attesting transfer of form-to-function mapping (e.g., Rasier & Hiligsmann, 2007), we predicted that learners will recruit linguistic means that are similar to the ones they use in their L1 (i.e., transfer of linguistic means). In particular, German learners will produce Verum focus utterances with all verb types (i.e.,

lexical-items, auxiliary-items and copula-items); Dutch learners will recruit lexical means even though these are not used for the same purpose in the target language (cf. von Stutterheim, 2003). Finally, we predict that German learners will show transfer on the phonetic realization of Verum focus and will not produce postnuclear accents as done by Italian native speakers (e.g., Mennen, 2004).

4.8 Experiment 2: Picture-difference task in L2 Italian

We replicated Experiment 1 with German and Dutch learners of Italian, using identical materials and the same procedure. Recording conditions were similar to the Italian natives. The Dutch learners were tested at the *Koninklijk Nederlands Instituut Rome*; the German learners at *la Casa di Goethe* and at the *Deutsches Historisches Institut*. All these institutions are located in Rome (Italy).

4.8.1 Participants

Fourteen Dutch adult learners of Italian (5 males, 9 females, average age = 47.3; *SD* = 4, range from 35 to 50 years) and fourteen German learners of Italian (4 males, 10 females, average age = 41.3; *SD* = 5.5, from 34 to 49 years) participated in the study. All learners had received Italian language teaching at the university or language courses at colleges in the Netherlands and in Germany prior to the time of their residence in Italy (none of them started learning Italian before the age of thirteen). The two groups did not differ in age, $t(27)= -1.60$, $p = .12$.

The duration of residence in Italy was also not significantly different (p = 0.8); the average residence was 19 years for both the Dutch learner group (SD = 5.8) and the German learner group (SD = 6.8).

To assess participants' L2 proficiency, learners performed a cloze test before the experiment (the Oxford written placement test for Italian; see Appendix D for information about age, length of permanence in Italy and written test scores).[48] The Dutch learners had an average score of 47.3 points (out of 52 points; SD = 3.1); the German learners 48.8 points (out of 52 points, SD = 2.7), a difference that was not significant (p = .2).

4.8.2 Materials

The material was the same as described in section 1.5.

4.8.3 Procedure

The procedure was the same as described in section 1.5. All sessions took place in quiet rooms at the *Koninklijk Nederlands Instituut Rome*, at *la Casa di Goethe* and at the *Deutsches Historisches Institut in Rom*.

[48] This test is available online http://www.lang.ox.ac.uk/courses/tst_placement_italian.html (accessed on the 10th of May, 2013).

4.9 Data selection

Both language group datasets consisted of 448 items produced in polarity contrast contexts. We discarded 151 items from the Dutch group data and 137 items from the German group data because of hesitations and disfluencies. This left 297 items for the Dutch group (112 lexical-items, 100 auxiliary-items, with 85 copula-items) and 311 for the German group (116 lexical-items, 110 auxiliary-items, with 85 copula-items).

4.10 Results

We analyzed the linguistic means to signal polarity contrast as well as unmarked cases in German and Dutch learners of L2 Italian and compared their relative frequency (%) to that of Italian native speakers (see Figure 4.4). We encountered the following categories:

1 Verum focus (with and without following postnuclear accents).
2 Tonally marked utterances with a nuclear pitch accent on the non-finite verb (in the auxiliary-items).
3 Utterances marked with sentence-internal particles or intensifiers (e.g., *proprio/davvero/veramente* roughly meaning "certainly").
4 Utterances using sentence-initial adverbs (e.g., *sì* or *invece sì*).

The unmarked cases comprised utterances realized with a nuclear pitch accent in default position (in our case, on the object noun).

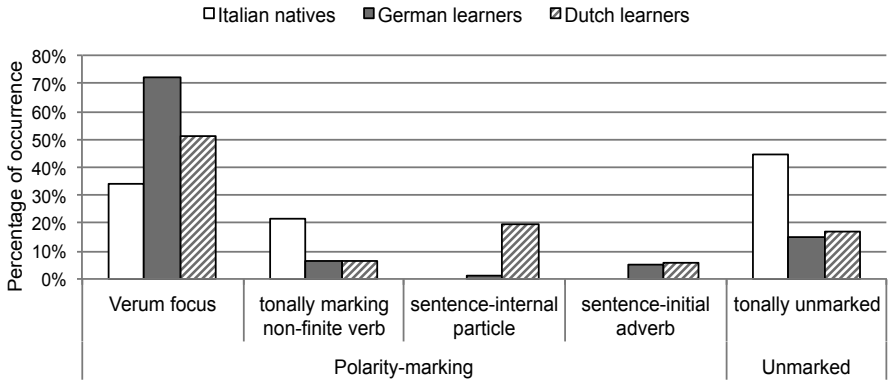


Figure 4.4: Polarity contrast condition – Relative frequency (%) of linguistic means to mark polarity contrast by advanced German and Dutch learners of Italian compared to Italian natives.

Figure 4.4 shows differences in polarity contrast marking between learners and natives on the one hand and between the two language learner groups on the other. To statistically validate these differences, a multinomial logistic regression analysis (Bates & Sarkar, 2007; Jaeger, 2008) confirmed that, compared to the Italian native group, German and Dutch learners produced significantly more nuclear pitch accents on the finite verb (ß = 1.80, *SE* = 0.20, $p < .0001$; ß = 1.35, *SE* = 0.20, $p < .001$, respectively), more sentence-internal particles (ß = 2.41, *SE* = 1.13, $p < .05$; ß = 5.02, *SE* = 1.02, $p < .0001$, respectively), and more sentence-initial adverbs (ß = 3.73, *SE* = 1.04, $p < .0001$; ß = 3.79, *SE* = 1.04, $p < .0001$, respectively). Moreover, compared to Dutch learners, German learners produced significantly more nuclear pitch accents on the finite verb (ß = 0.45, *SE*

= 0.22, $p < .05$), and significantly less sentence-internal particles (ß = -2.61, $SE = 0.55$, $p < .0001$), in line with behavior in their native languages (Turco, Braun, et al., 2013, Chapter 2). In (48) and (49) two utterance examples spoken by Dutch learners of L2 Italian are provided, both showing the use of sentence-internal (i.e. *proprio*) and sentence-initial (i.e. *invece sì*) means respectively.

(48) *Nella mia immagine la donna è proprio assonnata.*
In.the my picture the woman is PRT sleepy
("In my picture the woman is REALLY sleepy")

(49) *Invece nella mia immagine sì la volpe ha svuotato lo zaino.*
On the other hand in.the my picture PRT the fox has emptied the rucksack
("On the other hand in my picture the fox DID empty the rucksack")

Given the main effect of verb type on the distribution of Verum focus in Italian natives, we tested whether those differences also held for Dutch and German learners of Italian. Considering that there was no difference in the distribution of Verum focus between auxiliary-items and copula-items (see Figure 4.2), these items were collapsed into a single category (i.e., light verbs in Figure 4.5 below) and tested against lexical-items (i.e., full verbs).

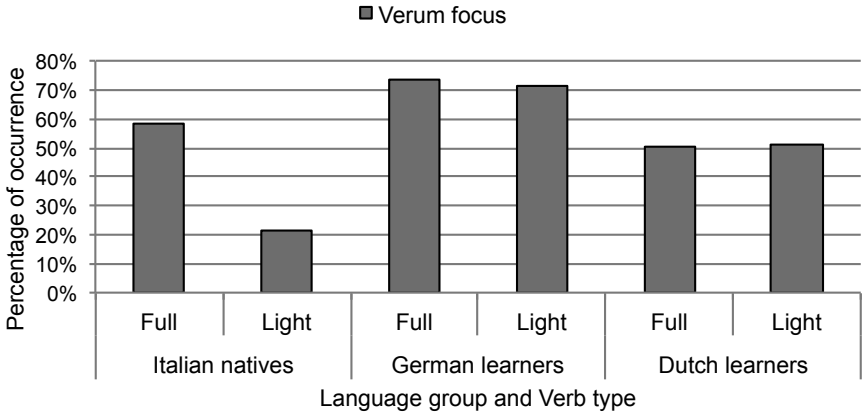
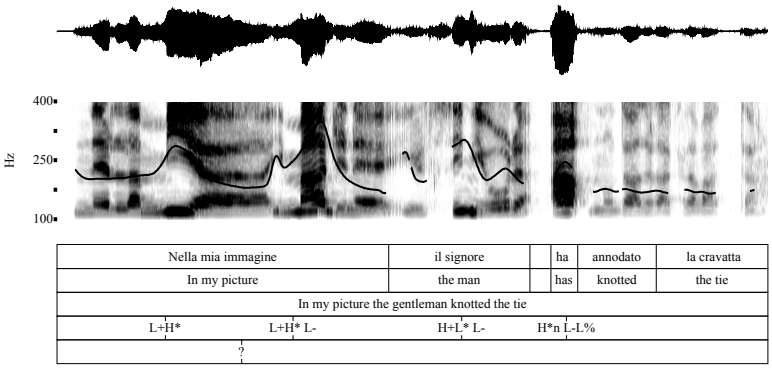


Figure 4.5: Verum focus – Relative frequency (%) of finite verbs realized with a nuclear pitch accent broken down by verb type (lexical-items: full vs. auxiliary-items and copula-items: light) and language group (Italian natives, German learners and Dutch learners).

Figure 4.5 suggests that, unlike for native Italian speakers, Verum focus was not affected by verb type in learners. Indeed, binomial logistic regression analyses for the two learner groups showed no significant effect of verb type (German learners: p = .5, Dutch learners: p = .4). Two examples of Verum focus produced by a German learner and a Dutch learner of Italian are shown in Figure 4.6(a) and (b) respectively.

(a)



(b)

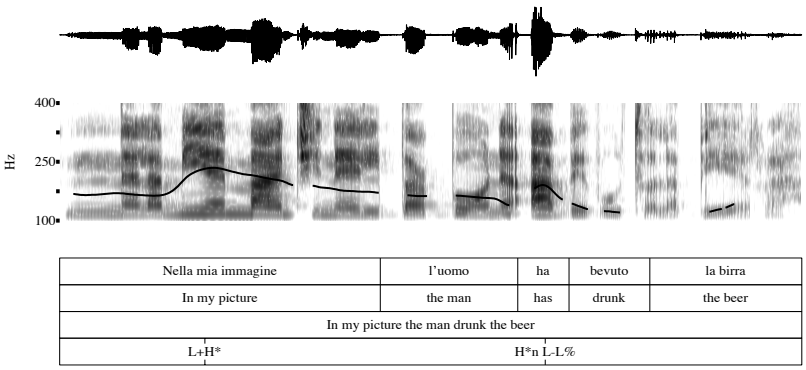


Figure 4.6(a)-(b): Example pitch track of Verum focus spoken by a (female) German learner of Italian (panel (a)) and by a (female) Dutch learner of Italian (panel (b)). The nuclear pitch accent (i.e., H*n) realized on the auxiliary *ha* ("has") is followed by deaccented non-finite verb (i.e., *annodato* "tied", *bevuto* "drunk") and object noun (i.e., *la cravatta* "the tie", *la birra* "the beer"). Annotations are based on Grice et al.'s labeling criteria (2005).

Regarding the phonetic implementation of Verum focus, we tested how both learner groups encoded postfocal constituents following accented finite verbs. In particular, we analyzed whether these constituents were realized as downstepped postnuclear accents (e.g., !H*+L) or as phrasal edge tones; these edge tones can either be aligned with the unstressed syllable following the accented syllable (i.e., early tone alignment) or with the stressed syllable of the last postfocal constituent (i.e., late tone alignment). In accents with early alignment, the pitch fall from the high-tone realized on the finite verb (i.e., H*n) is steeper than in accents with later alignments. Table 4.1 illustrates their distributions across the three language groups.

Postfocal realizations	Italian	German	Dutch
postnuclear accents	79.6%	3.6%	9.2%
late edge tone alignments	0.0%	12.9%	35.5%
early edge tone alignments	20.4%	83.5%	55.3%

Table 4.1: Intonational patterns of postfocal constituents following Verum focus - Relative frequency (%) of postnuclear accents, late edge tone alignments and early edge tone alignments by advanced German and Dutch learners compared to Italian natives.

A multinomial logistic regression analysis revealed a two-way interaction between LANGUAGE GROUP and TYPE OF POSTFOCAL REALIZATION (listed in Table 4.1): compared to Italian natives, German and Dutch learners produced significantly less postnuclear accents (ß = -4.28, *SE* = 0.46, $p < .0001$; ß = -3.25, *SE* = 0.39, $p < .0001$, respectively). Furthermore, the Dutch learners produced significantly more late edge tone alignments than Italian natives (ß = 2.40, *SE* = 1.0, $p < .05$), Italian natives and German learners did

not differ significantly in this respect (p = .2). Compared to the Dutch group, the German learners produced significantly more early edge tone alignments (ß = 1.02, SE = 0.5, p<.05). Thus, the analysis shows that when producing a nuclear pitch accent on the finite verb, German and Dutch learners deaccent postfocal material significantly more often than Italian native speakers. Moreover, German learners produced steeper falls significantly more often than Dutch learners.

4.11 Discussion

The second experiment showed clear differences in the encoding of polarity contrast between Italian natives and German and Dutch learners of Italian. As predicted, we found that learners expressed polarity contrast more frequently than Italian natives, providing evidence that they transferred the relevance of this pragmatic function to their L2. Polarity contrast was signaled overtly with a variety of linguistic means. On the one hand, the learners used linguistic means that were also employed by Italian natives (but with a higher frequency of occurrence), such as Verum focus. On the other hand, they produced linguistic means that were not specifically employed to mark polarity contrast by Italian natives, such as sentence-internal particles or intensifiers like *proprio/davvero* and, in a few cases, the sentence initial adverb *(invece) sì*. Despite their comparatively long residence in Italy (about 19 years on average), the learners' utterances showed traces of the organizational principles operating in their L1s. They recruited L2 surface means that are less frequently or never used in the target language. These findings are in line with previous investigations on the L2 encoding of information structure at a discourse level (von Stutterheim, 2003). However, while previous studies have mainly reported effects of

L1 transfer on the discourse organization of temporal and spatial information (see, for instance, Carroll & Lambert, 2006; Hendricks & Hickmann, 2011), our findings show that L1 transfer in advanced learners' productions can also affect common ground management on a more functional layer. More specifically, Dutch learners used sentence-internal intensifiers like *proprio/davvero*, which were never used by Italian speakers in these contexts. This reflects the necessity of Dutch learners to mark polarity contrast lexically, as they do in their L1. Additional support for this interpretation comes from pilot data on the marking of polarity contrast by advanced Dutch learners of French: in about 75% of the cases, the Dutch learners marked polarity contrast by using the sentence-internal particle *bien* (e.g., *Sur mon image l'enfant a bien mangé les bonbons*, "In my picture the child is certainly eating the candies"), which our French speakers never used in these contexts (see Chapter 3).

Similarly, L1 transfer seems to account for the frequent occurrence of Verum focus produced by German learners compared to Italian natives (and Dutch learners), which reflects what German native speakers do in comparable contexts (Turco, Braun, et al., 2013, Chapter 2). Furthermore, different from Italian natives, German learners produced nuclear pitch accents on finite verbs irrespective of verb type (i.e., full or light verbs), suggesting a reliance on German focus projection rules and not on the Italian ones (for similar findings, see Zubizaretta & Nava, 2011 and references therein). In German, Verum focus is realized equally on lexical, auxiliary and copula verbs (Turco, Braun, et al., 2013, Chapter 2): focused auxiliary and copula verbs can be promoted to prosodic words and consequently receive a pitch accent (Selkirk, 1995, section 1.2.2.3). German learners seem to transfer this principle in their L2. Furthermore, in line with previous

studies (e.g., Mennen, 2004; Rasier & Hiligsmann, 2007), we found that the phonetic implementation of the contrastive focal accents realized on the finite verb by German learners also exhibited phonetic transfer. In particular, the German learners produced steeper nuclear pitch falls more often followed by deaccented constituents than by postnuclear accents.

What probably cannot be explained on the basis of L1 transfer of linguistic means is the high percentage of Verum focus (about 45%) produced by Dutch learners of Italian, considering that in their L1 Dutch native speakers hardly produced Verum focus in the contexts investigated here (cf. Gussenhoven, 1983; Turco, Braun, et al., 2013, Chapter 2). There are two possible explanations for this finding. First, the accentuation on the polarity/assertion operators is a pattern that is in line with the classification of Germanic languages as being assertion-oriented (Dimroth et al., 2010). These Verum focus productions by Dutch learners of Italian seem to reflect the common underlying trait between German and Dutch on the relevance of polarity contrast marking for common ground management. Second, our results may be also explained in light of the "psychotypological" theories (cf. Kellerman, 1977), predicting that learners will acquire an L2 marking earlier when it contrasts with their L1 marking: there might have been enough Verum focus input to encourage Dutch learners to use intonational means instead of lexical means, which were not directly available in the input. This is supported by the finding that the intonational realization of Verum focus by Dutch learners is closer to the target language realization than that of the German learners. Specifically, the Dutch Verum focus shows a shallower, less prominent pitch fall (i.e., late edge tone alignments) that is closer to the postfocal realizations produced by Italian natives.

4.12 Conclusions

We investigated the acquisition of pragmatic functions that are marked less frequently and less consistently in the target language than in the native language. We therefore tested the linguistic means produced to mark affirmative polarity contrast by advanced German and Dutch learners of Italian and compared them to Italian natives.

The first experiment showed that Italian speakers were able to mark polarity contrast contexts, different with what was reported in earlier studies (Dimroth et al., 2010). In more than 30% of the cases they produced Verum focus. Even more interesting, we found that they also produced nuclear pitch accents on light verbs (in about 20% of the cases on both auxiliary-items and copula-items). This finding, so far undocumented for Italian, lends support to our second scenario, namely that the word status of the finite verb affects focus-projection. Hence, monosyllabic function words can be accented although they are less frequently accented than lexically full verbs. In the remaining cases, Italian speakers obeyed structural rules in marking polarity contrast: there were significantly more nuclear accents on lexical finite verbs than on auxiliary/copula verbs (here, focus marking was projected onto their respective lexical heads). It is thus possible that structural factors are ranked higher than discourse and pragmatic factors, a situation similar to what we found for French (Turco, Dimroth, et al., 2013, Chapter 3).

From a typological perspective, our data strongly support prior findings that polarity contrast is not as consistently marked in Italian as in German or Dutch (Turco, Braun, et al., 2013, Chapter 2). In about 45% of the cases, Italian speakers did not mark polarity contrast contexts, neither by intonation nor by lexical means. We assume that such lexical means are not produced in the contexts tested here because they are “too

assertive", resulting in a strong pragmatic effect. It cannot be excluded however the possibility that speakers might employ these markings (and, in particular, the construction *sì che*) in other syntactic configurations (e.g., elliptical structures) or in other regional varieties. Further evidence supporting the hypothesis that highlighting the contrast on the assertion/polarity operators in the tested contexts might not be so relevant in Italian is also provided by the few occurrences of the adverb *invece*, which clearly indicates a change of the topic situation (i.e., confederate: *In my picture…* vs. participant: *In my picture on the other hand*…) rather than of the polarity (Dimroth et al., 2010). Otherwise, Italian speakers could have well used *invece sì* to mark the change of topic along with the polarity (as learners did in a few occasions), an option that was never exploited by our speakers.

Experiment 2 investigated the implications of typological differences on L2 acquisition. Our data showed that advanced German and Dutch learners marked polarity contrast far more frequently than Italian natives. In particular, they transferred the relevance of this pragmatic function for the discourse flow, their L1 linguistic means (i.e., Verum focus and particles, respectively) and the phonetic implementation of Verum focus.

Taken together, our findings suggest the overt markings produced by our advanced learners mirror those of their native languages and are guided by the organizational principles that are part of the learners' (L1) linguistic knowledge. Previous studies (e.g., von Stutterheim & Nüse, 2003; Carroll & Lambert, 2006) have shown that learners were not able to refrain from their L1 organizational principles when involved in complex discourse tasks such as film-retellings or descriptions. In this study we showed

that learners transferred their L1 principles already at the utterance-level in a less-demanding task. At this point, it becomes interesting to speculate about the pragmatic consequences of such mismatches in common ground management: Would non-natives sound "too assertive" to native speakers' ears? Certain pragmatic functions might not be equally expressed in the grammar of languages and the choice of the linguistic means to accomplish them is language-specific. In order to attain a native-like proficiency, learners have to discover the functions of the grammatical features and unravel their (pragmatic) implications for information structure. As complex as it might be, this task should eventually be accomplished.

CHAPTER 5

5 SUMMARY AND CONCLUSIONS

In this dissertation we investigated the encoding of affirmative polarity contrast in Germanic (German, Dutch) and Romance languages (Italian, French). Furthermore, it was tested whether typological differences regarding the expression of polarity contrast had an impact on the acquisition of information structure marking in a second language. The current investigation provided experimental evidence on a much-debated yet empirically unexplored topic by using the same task procedure(s) in the four tested languages and in the L2 learner varieties.

Chapter 2 dealt with the encoding of polarity contrast in German and Dutch, two closely related languages, in order to find more systematic evidence on the expression of this pragmatic function and its relevance for common ground management. Despite the high-level similarity between these two languages - in terms of lexicon, syntax and focus-to-accent rules as well as assertion-orientation (Dimroth et al. 2010) - it was not clear under which conditions German and Dutch speakers produced Verum focus and affirmative particles, if both are grammatically possible. By means of two production studies - a picture-difference task and a picture-matching task - we compared how these languages signaled the shift from a negative to a positive polarity in two contexts, a) when contrasting the polarity relative to a different topic situation (polarity contrast) and b) when correcting the polarity relative to the same topic situation (polarity correction), and tested whether the preferred means varied according to condition. The comparison between these two contexts allowed us to test whether German and Dutch speakers

systematically express this pragmatic function even when opposite claims are not mutually exclusive, thus leaving open the option of highlighting (the contrast on) the assertion/polarity operators. Results from the two studies showed that in both conditions German speakers consistently produced Verum focus (i.e., as a high-falling pitch accent on the finite verb), while Dutch speakers mostly used the accented affirmative particle *wel*. These findings showed that even lexically and syntactically close languages can opt for very different solutions when coming to expressing the same pragmatic function. Future research will have to test whether sentence-internal particles in German and Verum focus in Dutch are used for other pragmatic functions apart from the ones tested in this study. Despite the cross-linguistic differences in terms of linguistic means, our study revealed that German and Dutch speakers express this form of contrast systematically, a finding that sheds light on the relevance of polarity contrast in these languages and goes in line with previous investigations on this issue (Dimroth et al., 2010).

In addition, it was found that in polarity correction, both affirmative particles and Verum focus were realized with stronger prosodic prominence than in polarity contrast. For instance, in corrective contexts the particle *wel* was produced more often in a peak-like contour, thus sounding more prominent than in contrastive contexts (produced more often in a hat pattern contour). While previous studies attribute differences of prominence to different degrees in the explicitness of a preceding denial (i.e., the function of "undoing" a context negation, Hogeweg, 2009), here we proposed that such a difference might be due to a secondary (syntagmatic) effect of the information structure of the utterance (i.e., absence or presence of an utterance-initial contrastive topic).

CHAPTER 5

Finally, the use of Verum focus and affirmative particles across the two languages sheds light on the functional equivalence between these two linguistic phenomena (cf. Schubiger, 1965); at the same time, it suggests that both linguistic means do not necessarily function on the same level: while particles operate at the level of the polarity operator (i.e., *within* the comment), Verum focus operates at the level of the assertion (i.e., *between* the topic and the comment). One possible way to corroborate this hypothesis in the future is to test whether affirmative particles can also be combined with negation in the same way as Verum focus can (section 1.1.3).

In Chapter 3, we investigated Verum focus from a phonological perspective, in two typologically distinct languages, German and French. Regarding the prosody-pragmatics interface, German is said to have a direct focus-to-accent mapping, which is largely absent in French – owing to structural constraints on the tonal realization of the minimal prosodic unit, the accentual phrase. When Verum focus is realized on function words like auxiliaries, pragmatic aspects (i.e., highlighting the contrast on the finite verb) directly compete with structural constraints, namely, avoiding an accent on phonologically weak elements such as monosyllabic auxiliaries. In order to test whether French speakers locate a focal accent on the carrier of the assertion (i.e., the auxiliary), we concentrated the analysis on auxiliary-items utterances (i.e., auxiliary plus non-finite verb) elicited with the picture-difference task procedure. Intonational analyses showed that auxiliaries were predominantly accented in German, as expected, with a high-falling nuclear contour (i.e., H* followed by the low phrase accent L-, in GToBI annotation) followed by postfocal deaccentuation. Interestingly, in French polarity contrast contexts we found a high number of (as yet undocumented) focal accents on monosyllabic

auxiliaries (accounting for one third of the cases). Hence, contrary to what previously found (Dimroth et al., 2010), our data showed that French speakers can also produce Verum focus on the auxiliary. Nonetheless, speakers did not do that systematically and rather produced a wide range of intonational patterns for the encoding of this form of contrast. When French speakers realized the same accent types in both conditions, we observed a shift in relative prominence (in terms of peak height) between initial and final accents, making the initial accents sound more prominent in polarity contrast than in non-polarity contrast contexts (control condition). We plan to conduct perception experiments in the future that will determine the impact of such scaling differences for the disambiguation of cases with or without Verum focus. At present, the comparison of the two languages in question suggests that German and French do not attribute the same functional importance to finite elements (i.e., auxiliary verbs), a result which goes in line with previous proposals and findings on this issue (cf. Bernini, 2009; Dimroth et al., 2010).

In Chapter 4 our cross-linguistic investigation on the relevance and the encoding of polarity contrast was tested by extending the analysis to Italian, another Romance language that does not appear to encode polarity contrast in a systematic way. To this end, we used the same task procedure as before. In addition to the auxiliary verb constructions, the intonational analysis was extended to a lexical verb condition (i.e., in which the assertion component is merged with the semantic content of the verb) and to a copula verb condition (i.e., carrying the assertion component only, cf. Bernini, 2009). This allowed us to draw a more complete picture on how the focal accent was distributed across verb types. The study showed that, similar to French, Italian speakers encoded

affirmative polarity contrast by producing Verum focus in one third of the cases, a result which was not found in previous studies (Dimroth et al., 2010). Furthermore, accents on finite verbs were more frequently produced on lexically full verbs compared to auxiliary/copula verbs; whereas, other linguistic means (e.g., sentence-initial adverbs or sentence-internal particles) were never produced by Italian speakers.

Cross-linguistic differences in polarity contrast marking grounded the motivation for testing the same phenomenon in L2 learner varieties. From the perspective of a German or Dutch learner of Italian, highlighting the contrast on the relevant assertion/polarity operators occurs less often and less uniformly in their target language compared to their native language (see Chapter 2). Given the attested typological differences, we investigated what German and Dutch learners of Italian do when encouraged to express polarity contrast in the same context setting and whether they would manage the interlocutors' common ground in the same way as they do in their L1. Results showed L1 transfer on the relevance of polarity contrast marking: German and Dutch learners encoded polarity contrast significantly more often than Italian natives and by recruiting linguistic means that are typically produced in their native languages (i.e., lexical means and Verum focus). Interestingly, Dutch learners produced a high number of Verum focus productions (though less frequently than German learners) even if this marking option is not recruited in their native language (as seen in Chapter 2). This linguistic choice suggests that Dutch learners have learnt that Verum focus is a possible encoding option in Italian, an explanation that is also supported by the fact the phonetic implementation of Verum focus by Dutch learners was much closer to the target than the one realized by German learners. Yet, an alternative explanation of the high frequency of

Verum focus in Dutch learners points to the existence of a common trait between German and Dutch: highlighting the assertion/polarity operators is very important for purposes of common ground management in both languages.

On the whole, these data suggested that the overt polarity markings produced by learners, as compared to the Italian natives, corresponded closely to the patterns preferred in the learners' native languages, even though the learners were highly advanced residents in Italy. This finding fully supported the claim that if the grammar of the native language makes it easy to encode certain information structure distinctions, speakers find them relevant for common ground management and consistently express them in discourse. As a consequence, learners tend to scrutinize the target language input for means allowing them to build up a discourse that follows the L1 patterns of information flow (von Stutterheim, 2003). It also appears that whenever the input of the target language is too variably signaled or unclear with respect to the encoding of polarity contrast, learners decide for one option, which is in accordance with their discourse expectations and needs (cf. Mennen, 1999).

To sum up, it appears that for German and Dutch speakers marking polarity contrast is crucial for common ground management. These languages are provided with a rich inventory of assertion and polarity markings, which encourages speakers to encode contrast on the assertion and polarity operators of the utterance (i.e., Verum focus and affirmative particles). The picture looks differently for French and Italian. Even though these languages have linguistic means to encode assertion and polarity markings (e.g., Verum focus is realized on some occasions; they have particles in initial and in internal position), speakers do not "choose" to use them. Perhaps, French and Italian speakers feel

that highlighting the contrast on the assertion/polarity operators might sound too (unnecessarily) assertive in the contexts investigated here, which results in the observed cross-linguistic differences. An alternative explanation is more structural: our comparison among different verb types clearly showed that the word status of the finite verb (whether it is a full lexical verb or a light verb) influences the expression of Verum focus, thereby suggesting that structural constraints (accenting phonologically weak elements) might play a role, too. Future studies are needed in order to decide between these two explanations.

In this investigation our observation of Verum focus was delimited to the prosodic realization of an "accent on the finite verb". Given the cross-linguistic variation in the expression of this phenomenon, in the future the definition of Verum focus requires a more exhaustive reformulation that does justice to the range of intonational phenomena observed in the Romance languages, including the markings on the non-finite verbs described in this dissertation.

NEDERLANDSE SAMENVATTING

Als mensen praten plannen ze hun uitingen voortdurend op basis van de wederzijdse kennis die ze met hun gesprekspartners delen, en in overeenkomst met hun communicatieve behoeften en interessen (d.w.z., *common ground management*, vgl. Krifka & Musan, 2012). De bijdragen die de spreker aan de *common ground* toevoegt zijn in de regel "waar", maar dat hoeven ze niet te zijn: Beweringen worden altijd gedaan met betrekking tot een bepaalde situatie (expliciet of impliciet) waarover gesproken wordt; en het is met betrekking tot deze situatie dat de sprekers/luisteraars de waarheid ervan kunnen evalueren en bevestigen (vgl. Klein, 2008). Onder bepaalde informationele omstandigheden, kunnen de sprekers het noodzakelijk vinden hun beweringen (bijv., *Hij springt wel*) met betrekking tot een eerdere vergelijkbare uiting met negatieve polariteit (bijv., *Meneer Blauw springt niet*) te bevestigen. Dit thema staat in het centrum van onze case-studie over *polariteits-contrast*.

Deze empirische studie is geënt op de door Klein (1998, 2006) voorgestelde *finiteness-assertion* hypothese. Het finiete werkwoord stelt een relatie vast tussen de topic (bijv., *Meneer Blauw*) en de comment (bijv., *springt*) van de uiting en bevestigt zo'n relatie ten opzichte van een specifieke topic situatie. Een van de (illocutionaire) effecten van het maken van zo'n verbinding kan tot de uitdrukking van polariteits-contrast leiden, wat in verschillende talen op verschillende wijzen geëncodeerd kan worden. Recente empirische studies (vgl. Dimroth et al., 2010) suggereren dat polariteits-contrast een cruciale rol in *common ground management* in Germaanse (bijv., Duits en Nederlands)

maar niet in Romaanse (bijv., Italiaans en Frans) talen speelt. De grammatica's van Duits en Nederlands beschikken niet toevallig over een uitgebreid repertoire aan linguïstische middelen zoals Verum focus - een accent op het finiete werkwoord (bijv., Höhle, 1992) - en *bevestigende* partikels (zoals het Nederlandse *wel* of het Duitse *schon/wohl*), die de functie hebben polariteits-contrast uit te drukken. In de Romaanse talen Italiaans en Frans schijnt deze pragmatische functie echter niet op dezelfde wijze belangrijk te zijn. Een studie (vgl. Dimroth et al., 2010) waarin het navertellen van een film werd onderzocht onthulde dat Romaanse sprekers, vergeleken met Germaanse sprekers, geen zichtbare markeringen voor polariteits-contrast in hun monologen produceren; in plaats daarvan neigen ze ertoe contrastieve relaties tussen discourse topics te encoderen. Bij deze typologische verschillen doet zich de vraag voor wat de sprekers van deze talen dan "doen" als ze ertoe gedwongen worden de aandacht van de gesprekspartner op een verandering van polariteit in een dialoog te vestigen. In het eerste deel van dit proefschrift wordt de relevantie van polariteits-contrast voor *common ground* beheer in Romaanse en Germaanse talen, en de encodering van dergelijke pragmatische functies in deze talen getest door middel van een procedure die gebruik maakt van een op een dialoog gebaseerde taak.

Een andere vraag onderzoekt hoe zulke typologische verschillen met leerbaarheidsproblemen bij het leren van een tweede taal met elkaar in verbinding staan. Studies op dit gebied hebben laten zien dat zelfs op zeer hoog niveau, lerenden de neiging hebben middelen uit L2 te gebruiken om een gesprek op te bouwen, die het patroon van de informatiestroom uit L1 volgen. Gezien de verschillen in de relevantie en uitdrukking van polariteits-contrast, is het interessant te vragen wat volwassenen die een tweede taal

leren doen wanneer in hun tweede taal een pragmatische functie zoals polariteits-contrast geen duidelijke input heeft of te variabel geëncodeerd wordt. In het tweede deel van dit proefschrift testen we hoe Duitse en Nederlandse volwassenen, die Italiaans als tweede taal leren, omgaan met dit soort specifieke informatiestructuur.

Om de sprekers polariteitscontrast-uitingen te ontlokken, ontwierpen we een taak waarin plaatjes met verschillen werden getoond. Deze taak lokt vergelijkingen van de plaatjes uit door middel van een dialoogspel tussen een proefleider en de deelnemer. De structuur van het dialoogspel is gebaseerd op een drie-stappen schema: een "baselineplaatje", toegankelijk voor beide deelnemers, waarin een situatie wordt getoond (bijv., een kind dat een bankbiljet verscheurt); een "ontkennend" plaatje, waarin het tegenovergestelde te zien is (bijv., het kind verscheurt het bankbiljet niet) en dat alleen voor de proefleider zichtbaar is; een "bevestigend" plaatje dat lijkt op het baseline plaatje (bijv., het kind verscheurt het bankbiljet), dat alleen de deelnemer kan zien. Deze taak was ontworpen om gevallen van contrast te genereren in een setting waar beweringen met tegenovergestelde polariteit elkaar niet uitsluiten omdat ze naar twee verschillende topics verwijzen (geoperationaliseerd in twee beelden). Dit protocol werd uitgevoerd met deelnemers die één van de vier hier onderzochte talen als moedertaal hadden en met Nederlanders en Duitsers die op een hoog niveau Italiaans geleerd hadden (vgl. hoofdstuk 2, 3 en 4).

In hoofdstuk 2 stelden we de vraag of de encodering van polariteits-contrast voorspelbaar is op basis van de vergelijkbare grammaticale structuur van twee nauw verwante talen, Duits en Nederlands. Het is bekend dat deze talen bevestigende partikels gebruiken (bijv., Hogeweg, 2009) en/of Verum focus (bijv., Höhle, 1992; Lohnstein,

2012); we hebben echter geen duidelijk beeld van wat hun specifieke semantische bijdrage is in de contexten die hier getest worden. De resultaten laten zien dat terwijl Duitsers deze contrastvorm uitdrukten met behulp van Verum focus (bijv., Höhle, 1992), de Nederlanders het beklemtoonde bevestigende partikel *wel* meestal produceerden. Dit laat zien dat zelfs lexicaal en syntactisch verwante talen zich anders gedragen als het erop aankomt dezelfde pragmatische functie te signaleren en werpt licht op de functionele gelijkwaardigheid tussen partikels en intonatie (zie Schubiger, 1965). We vonden bovendien dat in contexten waarin de polariteit gecorrigeerd moest worden, zowel bevestigende partikels en Verum focus met sterkere prosodische nadruk werden gerealiseerd in vergelijking met polariteits-contrast contexten, en weerspiegelt aldus verschillende illocutionaire krachten en taalhandelingen. Dit verschil werd in beide talen gevonden en kan het gevolg zijn van een secundair (syntagmatisch) effect op de informatiestructuur van de uiting (d.w.z., de af- of aanwezigheid van een contrastieve topic).

In hoofdstuk 3 onderzoeken we de fonologische expressie van Verum focus in twee typologisch verschillende talen, Duits en Frans. Vergeleken met Duits, schijnt Frans geen directe *focus-mapping* te bezitten vanwege structurele beperkingen die de tonale realisatie van de minimale prosodische eenheid, de *accentual phrase*, beinvloeden (Jun & Fougeron, 2000, 2002). Als Verum focus op hulpwerkwoorden wordt toegepast, kunnen structurele beperkingen, zoals het vermijden van een accent op zwakke fonologische elementen, met pragmatische aspecten concurreren (d.w.z., het contrast markeren). Het resultaat was dat Duitstaligen, zoals verwacht, hoofdzakelijk een high-vallende nucleaire toonhoogteaccenten op hulpwerkwoorden (GToBI, zie Grice, Baumann, et al., 2005)

produceerden gevolgd door een postfocale deaccentuering. Opmerkelijk is dat we een groot aantal (tot nog toe niet gedocumenteerde) focale accenten op monosyllabische hulpwerkwoorden in het Frans vonden (die éénderde van de gevallen voor hun rekening nemen), wat in strijd is met wat in eerdere studies is gerapporteerd (Dimroth et al., 2010). Onze deelnemers deden dit echter niet systematisch maar produceerden meestal andere intonatiepatronen in de betreffende context die fonologisch identiek zijn met vergelijkbare gevallen zonder contrast op de polariteit. Gebaseerd op onze bevindingen komen we tot de voorlopige conclusie dat het functionele belang dat aan de finiete werkwoorden in het Duits wordt toegeschreven niet voor het Frans geldt (Bernini, 2009; Dimroth et al., 2010).

In de laatste twee studies (hoofdstuk 4) onderzochten we de encodering van polariteits-contrast en de relevantie van deze pragmatische functie voor *common ground management* in het Italiaans (dat, zoals het Frans, polariteits-contrast niet op systematisch wijze schijnt the encoderen). Naast de hulpwerkwoorden (bijv., hebben) omvatte de analyse ook lexicale items (bijv., het werkwoord *wassen*, waarin de assertiecomponent en de semantische component van het werkwoord zijn samengevoegd) en koppel-items (bijv., het werkwoord *is*, dat alleen de assertie component draagt), die ons een completer beeld geven van hoe het focale accent verdeeld wordt over werkwoordsoorten. De resultaten lieten zien dat accenten op finiete werkwoorden vaker op zelfstandige werkwoorden dan op hulp/koppel werkwoorden (éénderde van alle gevallen) werd gerealiseerd, terwijl lexicale middelen (bijv., bijwoorden zoals (*invece*) *sì* “on the other hand, yes (s/he did it)” gebruikt in de begin- of middelpositie van een zin en versterkers zoals *proprio* “zeker”) door italiaanstaligen nooit werden gebruikt.

NEDERLANDSE SAMENVATTING

Ten aanzien van zulke typologische verschillen betreffende de relevantie van polariteits-contrast tussen deze twee taalfamilies, onderzochten we hoe deze pragmatische functie door vergevorderde lerenden geëncodeerd wordt. Vanuit het perspectief van een Nederlander of Duitser die Italiaans leert, wordt polariteits-contrast minder vaak en minder systematisch gemarkeerd in hun L2 dan in hun moedertaal. Daarna vroegen we ons af wat de L2 (Italiaans) lerenden doen wanneer ze polariteits-contrast in die taal, waar vergelijkbare opties (d.w.z., bevestigende partikels, Verum focus) als in hun L1 (Duits, Nederlands) ontbreken, markeren. Gebruik makend van dezelfde procedure, onderzochten we of Italiaans lerende Duitsers en Nederlanders de relevantie van polariteitscontrast-markering (voor *common ground* beheer) vanuit hun moedertaal naar L2 overdragen en, als dat het geval is, of ze linguïstische middelen aanwenden die vergelijkbaar zijn met die ze in hun L1 gebruiken (d.w.z., Verum focus, partikels). De resultaten lieten een overdraging van de relevantie van polariteitscontrast-markering zien (Duitsers en Nederlanders encodeerden polariteits-contrast in het Italiaans duidelijk vaker dan Italiaanse moedersprekers) en ook een overdraging van de linguïstische middelen (Nederlanders gebruikten meer partikels, Duitsers meer Verum focus). Over het geheel genomen suggereren deze gegevens dat mensen die een tweede taal leren de neiging hebben deze L2 te onderzoeken naar middelen die het hun mogelijk maken een gesprek op te bouwen dat op de informatieorganisatie van hun L1 is gebaseerd (d.w.z., *discourse accent*, von Stutterheim, 2003)

Het proefschrift heeft bijgedragen aan een discussie over de typologie en aan het verwerven van een veelbesproken - maar empirisch niet onderzocht - onderzoeksthema. Voor Duits- en Nederlandstaligen is het markeren van polariteits-contrast cruciaal voor

common ground management, en hoewel Frans en Italiaans over linguïstische middelen beschikken om assertie en polariteits-markeringen te encoderen (bijv., ze hebben partikels in het begin en in het midden van een zin, en kunnen Verum focus markeren), "kiezen" Frans- en Italiaanstaligen er niet voor deze opties te gebruiken. De analyse van de L2 verwerving ondersteunt dit verschil tussen de talen. Het kan zijn dat iemand die een Romaanse taal als moedertaal heeft het gevoel heeft "te stellig" over te komen als hij het contrast op de betreffende operatoren in de hier onderzochte contexten benadrukt. Anderzijds wordt een alternatieve (structurele) verklaring ondersteund die zich baseert op wat voor soort werkwoord (zelfstandig of hulp/koppel werkwoord) de realisering van Verum focus beinvloedt, wat suggereert dat structurele beperkingen (beklemtonen van fonologisch zwakke elementen) eventueel ook een rol kunnen spelen. Meer gegevens (ook van waarnemingsstudies) zijn nodig om tussen deze twee verklaringen te beslissen. In elk geval blijkt dat wanneer de input van de doeltaal te variabel geëncodeerd is of te onduidelijk met betrekking tot het encoderen van polariteits-contrast is, gaan L2 lerenden voor die optie die in overeenkomst is met hun gespreksverwachtingen en behoeften (vgl. Mennen, 1999).

In dit proefschrift was onze observatie van Verum focus beperkt tot de observatie van een "accent op het finiete werkwoord". Gegeven de cross-linguïstische variatie in de uitdrukking van dit fenomeen, vereist de definitie van Verum focus in de toekomst een grondigere reformulatie. Deze herformulering zal recht doen aan de reeks van intonatiepatronen die zijn geobserveerd in de huidige Italiaanse en Franse data, met inbegrip van de markeringen op de niet-finiete werkwoorden die we hier beschreven hebben.

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APPENDICES

APPENDIX A

A PICTURE-DIFFERENCE TASK STIMULUS MATERIALS

Table A.1: Context negation utterances spoken by the German confederate speaker.

Verb type	Context negation utterance
lexical-items	Auf meinem Bild schlägt der Boxer den Gegner nicht.
	Auf meinem Bild wirft der Hahn den Bumerang nicht.
	Auf meinem Bild knackt der Gorilla die Kokosnuss nicht.
	Auf meinem Bild kneift der Schüler der Lehrer nicht.
	Auf meinem Bild beißt die Kobra das Pferd nicht.
	Auf meinem Bild schießt der Spieler den Ball nicht.
	Auf meinem Bild sticht die Hummel das Schwein nicht.
	Auf meinem Bild drückt der Soldat den Abzug nicht.
	Auf meinem Bild liest der Mann das Buch nicht.
	Auf meinem Bild raucht der Mann die Zigarette nicht.
	Auf meinem Bild wäscht die Frau die Hose nicht.
	Auf meinem Bild isst das Kind das Sandwich nicht.
auxiliary-items	Auf meinem Bild hat der Polizist die Tür nicht aufgebrochen.
	Auf meinem Bild hat der Junge den Reifen nicht zerstochen.
	Auf meinem Bild hat das Mädchen den Geldschein nicht zerrissen.
	Auf meinem Bild hat das Kind die Bonbons nicht gegessen.
	Auf meinem Bild hat die Frau die Blume nicht gepflückt.
	Auf meinem Bild hat der Straßenkehrer den Gehweg nicht gefegt.
	Auf meinem Bild hat der Fleischer das Fleisch nicht geschnitten.
	Auf meinem Bild hat der Herr die Sektflasche geöffnet.
	Auf meinem Bild hat der Obdachlose das Bier nicht getrunken.
	Auf meinem Bild hat der Jaguar die Schwalbe nicht gebissen.
	Auf meinem Bild hat der Herr die Krawatte nicht geknotet.
	Auf meinem Bild hat der Waldarbeiter den Baum nicht gefällt.
copula-items	Auf meinem Bild ist die Frau nicht verwundert.
	Auf meinem Bild ist die Frau nicht verschlafen.
	Auf meinem Bild ist die Frau nicht hungrig.
	Auf meinem Bild ist die Frau nicht glücklich.
	Auf meinem Bild ist der Mann nicht verliebt.
	Auf meinem Bild ist die Frau nicht wütend.
	Auf meinem Bild ist die Frau nicht gestresst.
	Auf meinem Bild ist der Mann nicht angeekelt.

APPENDIX A

Table A.2: Context negation utterances spoken by the Dutch confederate speaker.

Verb type	Context negation utterance
lexical-items	Op mijn plaatje slaat de boxer zijn tegenstander niet.
	Op mijn plaatje gooit de haan de boemerang niet.
	Op mijn plaatje breekt de gorilla de kokosnoot niet.
	Op mijn plaatje keert het kind de zandloper niet om.
	Op mijn plaatje bijt de cobra het paard niet.
	Op mijn plaatje schopt de voetballer de bal niet.
	Op mijn plaatje steekt de hommel het varken niet.
	Op mijn plaatje knijpt de schooljongen zijn medescholier niet.
	Op mijn plaatje leest de man het boek niet.
	Op mijn plaatje rookt de meneer de sigaret niet.
	Op mijn plaatje wast de huisvrouw de broek niet.
	Op mijn plaatje eet het kind het stokbrood niet.
auxiliary-items	Op mijn plaatje heeft de politieagent de kluis niet geforceerd
	Op mijn plaatje heeft de jongen de band niet lekgeprikt.
	Op mijn plaatje heeft de vos de rugzak niet leeggemaakt.
	Op mijn plaatje heeft het kind de snoepjes niet opgegeten.
	Op mijn plaatje heeft de mevrouw de bloem niet geplukt.
	Op mijn plaatje heeft de straatveger de stoep niet geveegd.
	Op mijn plaatje heeft de slager het vlees niet gesneden.
	Op mijn plaatje heeft de meneer de fles niet geopend.
	Op mijn plaatje heeft de luipaard de vogel niet gebeten.
	Op mijn plaatje heeft de meneer zijn stropdas niet geknoopt.
	Op mijn plaatje heeft de houthakker de boom niet gekapt.
	Op mijn plaatje heeft de dakloze de fles bier niet leeggedronken.
copula-items	Op mijn plaatje is de vrouw niet verbaasd.
	Op mijn plaatje is de vrouw niet slaperig.
	Op mijn plaatje is de man niet verkouden.
	Op mijn plaatje is de vrouw niet hongerig.
	Op mijn plaatje is de vrouw niet gelukkig.
	Op mijn plaatje is de man niet verliefd.
	Op mijn plaatje is de vrouw niet gestresst.
	Op mijn plaatje is de man niet verlegen.

APPENDIX A

Table A.3: Context negation utterances spoken by the Italian confederate speaker.

Verb type	Context negation utterance
lexical-items	Nella mia immagine il sindaco non taglia il nastro.
	Nella mia immagine il gallo non lancia il boomerang.
	Nella mia immagine il gorilla non rompe la noce di cocco.
	Nella mia immagine il bambino non gira la clessidra.
	Nella mia immagine il cobra non morde il cavallo.
	Nella mia immagine il giocatore non calcia la palla.
	Nella mia immagine il calabrone non punge il maiale.
	Nella mia immagine il soldato non preme il grilletto.
	Nella mia immagine l'uomo non legge il giornale.
	Nella mia immagine l'uomo non fuma la sigaretta.
	Nella mia immagine la casalinga non lava i pantaloni.
	Nella mia immagine il bambino non mangia il panino.
auxiliary-items	Nella mia immagine l'elefante non ha sfondato il pavimento.
	Nella mia immagine il ragazzo non ha bucato la ruota.
	Nella mia immagine la bambina non ha strappato la banconota.
	Nella mia immagine la volpe non ha svuotato lo zaino.
	Nella mia immagine il bambino non ha mangiato le caramelle.
	Nella mia immagine la signora non ha raccolto il fiore.
	Nella mia immagine l'uccello non ha svegliato la guardia.
	Nella mia immagine il macellaio non ha tagliato la carne.
	Nella mia immagine il barbone non ha bevuto la birra.
	Nella mia immagine il signore non ha annodato la cravatta.
	Nella mia immagine il boscaiolo non ha abbattuto l'albero.
	Nella mia immagine il poliziotto non ha arrestato il ladro.
copula-items	Nella mia immagine la donna non è sbalordita.
	Nella mia immagine l'uomo non è impaurito.
	Nella mia immagine la donna non è assonnata.
	Nella mia immagine l'uomo non è raffreddato.
	Nella mia immagine la donna non è affamata.
	Nella mia immagine la donna non è arrabbiata.
	Nella mia immagine l'uomo non è disgustato.
	Nella mia immagine l'uomo non è innamorato.

APPENDIX A

Table A.4: Context negation utterances spoken by the French confederate speaker.

Verb type	Context negation utterance
lexical-items	Sur mon image le maire ne coupe pas le ruban.
	Sur mon image le canard ne lance pas le boomerang.
	Sur mon image le gorille ne casse pas la noix de coco.
	Sur mon image le garçon ne tourne pas le sablier.
	Sur mon image le cobra ne mord pas le cheval.
	Sur mon image le boxeur ne frappe pas son adversaire.
	Sur mon image le bourdon ne pique pas le cochon.
	Sur mon image l'écolier ne pince pas le professeur.
	Sur mon image l'homme ne lit pas le livre.
	Sur mon image l'homme ne fume pas la cigarette.
	Sur mon image la femme ne lave pas le pantalon.
	Sur mon image l'enfant ne mange pas le sandwich.
auxiliary-items	Sur mon image l'éléphant n'a pas défoncé le parquet.
	Sur mon image le garçon n'a pas crevé le ballon.
	Sur mon image l'enfant n'a pas déchiré le billet.
	Sur mon image le renard n'a pas vidé le sac à dos.
	Sur mon image l'enfant n'a pas mangé les bonbons.
	Sur mon image la dame n'a pas cueilli la tulipe.
	Sur mon image l'oiseau n'a pas réveillé le policier.
	Sur mon image le balayeur n'a pas nettoyé le trottoir.
	Sur mon image le gardien n'a pas arrêté le ballon.
	Sur mon image le bûcheron n'a pas abattu l'arbre.
	Sur mon image le gardien n'a pas arrêté le ballon.
	Sur mon image le jaguar n'a pas attrapé l'hirondelle.
copula-items	Sur mon image la femme n'est pas étonnée.
	Sur mon image l'homme n'est pas effrayé.
	Sur mon image la femme n'est pas endormie.
	Sur mon image l'homme n'est pas enrhumé.
	Sur mon image la femme n'est pas affamée.
	Sur mon image la femme n'est pas enrage.
	Sur mon image la femme n'est pas irritée.
	Sur mon image l'homme n'est pas dégoûté.

APPENDIX B

B PICTURE-MATCHING TASK STIMULUS MATERIALS

Table B.1: Pre-recorded audio stimuli in German.

Verb type	Context negation utterance
lexical-items	Die Lehrerin schlägt die Schülerin nicht.
	Das Engelchen wirft die Bombe nicht.
	Die Frau knackt die Nuss nicht.
	Der Jaeger drückt den Abzug nicht.
	Der Piranha beißt den Taucher nicht.
	Das Kind schießt den Ball nicht.
	Die Mücke sticht das Mädchen nicht.
	Der Affe kneift das Schwein nicht.
	Der Mann liest das Buch nicht.
	Der Mann raucht die Zigarre nicht.
	Der Mann wäscht das Auto nicht.
	Der Junge isst den Apfel nicht.
auxiliary-items	Der Einbrecher hat die Tür nicht aufgebrochen.
	Der Adler hat den Heißluftballon nicht zerstochen.
	Der Postbote hat den Brief nicht zerrissen.
	Der Indianer hat die Banane nicht gegessen.
	Der Bauer hat die Aubergine nicht gepflückt.
	Das Mädchen hat den Kamin nicht gefegt.
	Der Barkeeper hat das Bier nicht geöffnet.
	Die Katze hat die Maus nicht gebissen.
	Der Koch hat die Möhre nicht geschnitten.
	Der Akrobat hat das Seil nicht verknotet.
	Der Handwerker hat die Mauer nicht abgerissen.
copula-items	Das Gesicht ist nicht das von Horst Kohler.
	Das Gesicht ist nicht das von Albert Einstein.
	Das Gesicht ist nicht das von Claudia Schiffer.
	Das Gesicht ist nicht das von Til Schweiger.
	Das Gesicht ist nicht das von Papa Ratzinger.
	Das Gesicht ist nicht das von Michael Ballack.
	Das Gesicht ist nicht das von Michael Schumacher.
	Das Gesicht ist nicht das von Helmut Kohl.

APPENDIX B

Table B.2: Pre-recorded audio stimuli in Dutch.

Verb type	Context negation utterance
lexical-items	De schooljuffrouw slaat het kind niet.
	Cupido gooit de bom niet.
	De mevrouw breekt de walnoot niet.
	De kok keert de omelet niet.
	De piranha bijt de duiker niet.
	Het kind schopt de bal niet.
	De mug steekt de schildpad niet.
	De aap knijpt het varken niet.
	De meneer leest het boek niet.
	De man rookt de sigaar niet.
	De man wast de auto niet.
	De jongen eet de appel niet.
auxiliary-items	De adelaar heeft de heteluchtballon niet lekgeprikt.
	De baby heeft de tas niet leeggemaakt.
	De indiaan heeft de banaan niet opgegeten.
	De boer heeft de aubergine niet geplukt.
	Het meisje heeft de open haard niet geveegd.
	De barman heeft de fles bier niet geopend.
	De kok heeft de wortel niet gesneden.
	De kat heeft de libel niet gebeten.
	De acrobaat heeft de knoop niet gelegd.
	De metselaar heeft de muur niet afgebroken.
	Het kind heeft het flesje niet leeggedronken.
copula-items	Deze person is niet André Hazes.
	Deze persoon is niet Frans Bauer.
	Deze persoon is niet Hans Klok.
	Deze persoon is niet Jamai.
	Deze persoon is niet Jan Peter Balkenende.
	Deze persoon is niet Jim Bakkum.
	Deze persoon is niet Koningin Beatrix.
	Deze persoon is niet Chantal Janzen.

APPENDIX C

C ABSOLUTE FREQUENCY OF THE DATA POINTS REPORTED IN CHAPTER 2

Table C.1: Absolute frequency of Verum focus (VF), affirmative particles (P), other realizations (others) and unmarked cases produced in polarity contrast and in polarity correction by 12 Dutch speakers[49] (see Figure 2.1, Chapter 2).

Linguistic means	Polarity contrast	Polarity correction
	N	*N*
verum focus (VF)	0	17
particles (P)	325	226
others	8	24
unmarked	10	79
Total	*343*	*346*

[49] We remind that two Dutch speakers were excluded from the analysis, this left 343 items (out of the 393 occurrences reported in Table 2.1) and 346 items (out of 397 occurrences). Note that bars illustrated on the figures of Chapter 2 are based on averaged distributions in % over speakers.

APPENDIX C

Table C.2: Absolute frequency of accented vs. unaccented *wel* produced in polarity contrast and in polarity correction by Dutch speakers (see Figure 2.2, Chapter 2).

Wel	Polarity contrast	Polarity correction
	N	*N*
accented	290	211
unaccented	16	9
creaky voice	19	6
Total	*325*	*226*

Table C.3: Absolute frequency of the accentual realizations on (the accented cases of) *wel* produced in polarity contrast and in polarity correction by Dutch speakers (see Figure 2.4 Chapter 2).

Accented *wel*	Polarity contrast	Polarity correction
	N	*N*
H*L L% (fall)	23	112
!H*L L% (downstepped fall)	218	58
others	49	41
Total	*290*	*211*

APPENDIX C

Table C.4: Absolute frequency of Verum focus (VF), affirmative particles (P), other realizations (others) and unmarked cases produced in polarity contrast and in polarity correction by German speakers (see Figure 2.5, Chapter 2).

Linguistic means	Polarity contrast	Polarity correction
	N	*N*
verum focus (VF)	282	277
particles (P)	0	0
others	0	44
unmarked	55	46
Total	*337*	*367*

APPENDIX D

D BACKGROUND INFORMATION ON GERMAN AND DUTCH LEARNERS OF ITALIAN

Table D.1: German learners of L2 Italian - Age, length of permanence in Italy and written test score.

Learner	Age	Length of permanence in Italy	Written test score
GL1	47 years	28 years	45/52
GL2	34 years	12 years	52/52
GL3	33 years	14 years	50/52
GL4	40 years	18 years	47/52
GL5	41 years	20 years	46/52
GL6	36 years	10 years	47/52
GL7	45 years	12 years	44/52
GL8	39 years	25 years	48/52
GL9	44 years	23 years	46/52
GL10	50 years	20 years	51/52
GL11	45 years	24 years	48/52
GL12	43 years	19 years	49/52
GL13	42 years	26 years	50/52
GL14	49 years	19 years	51/52

APPENDIX D

Table D.2: Dutch learners of L2 Italian - Age, length of permanence in Italy and written test score.

Learner	Age	Length of permanence in Italy	Written test score
DL1	45 years	10 years	45/52
DL2	52 years	24 years	52/52
DL3	42 years	20 years	50/52
DL4	49 years	12 years	47/52
DL5	50 years	13 years	46/52
DL6	49 years	27 years	47/52
DL7	52 years	20 years	44/52
DL8	49 years	21 years	45/52
DL9	48 years	22 years	46/52
DL10	47 years	25 years	51/52
DL11	50 years	14 years	48/52
DL12	35 years	19 years	49/52
DL13	44 years	26 years	49/52
DL14	46 years	20 years	51/52

APPENDIX E

E ABSOLUTE FREQUENCY OF THE DATA POINTS REPORTED IN CHAPTER 4

Table E.1: Polarity contrast condition - Absolute frequency of linguistic means to mark polarity contrast by Italian native speakers (see Figure 4.1).

Linguistic means	*N*
verum focus	103
tonally marking non-finite verb	64
sentence-internal particle	0
sentence-internal adverbs	0
unmarked	133
Total	*300*

Table E.2: Verum focus - Absolute frequency of nuclear pitch accent placement broken down by verb type (lexical-items, auxiliary-items, copula-items, see Figure 4.2).

Nuclear accent placement	Lexical-items	Auxiliary-items	Copula-items
	N	*N*	*N*
finite verb (Verum focus)	60	25	18
non-finite verb	-	64	-
complement	43	28	62
Total	*103*	*117*	*80*

APPENDIX E

Table E.3: Polarity contrast condition - Absolute frequency of linguistic means to mark polarity contrast by advanced German and Dutch learners compared to Italian natives (see Figure 4.4)

Linguistic means	Italian	German	Dutch
	N	*N*	*N*
verum focus	103	225	152
tonally marking non-finite	64	20	20
sentence-internal particle	0	4	58
sentence-initial adverb	0	15	17
tonally unmarked	133	47	50
Total	*300*	*311*	*297*

Table E.4: Verum focus: Absolute frequency of nuclear pitch accents broken down by verb type (lexical-items: full vs. auxiliary-items and copula-items: light) and language group (Italian natives, German learners and Dutch learners, see Figure 4.5).

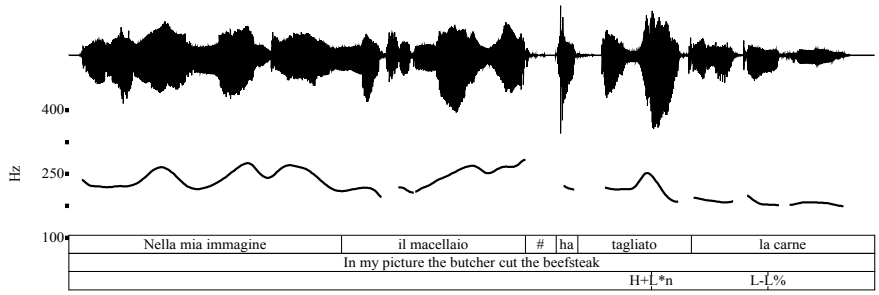
Verum focus	Italian		German		Dutch	
	Full	Light	Full	Light	Full	Light
Yes	60	43	102	123	52	100
No	43	154	37	49	51	94
Total	*103*	*197*	*139*	*172*	*103*	*194*

Table E.5: Intonational patterns of postfocal constituents following Verum focus - Absolute frequency of postnuclear accents, late edge tone alignments and early edge tone alignments by advanced German and Dutch learners compared to Italian natives (see Table 4.1)

Postfocal realizations	Italian	German	Dutch
	N	*N*	*N*
postnuclear accents	82	8	14
late edge tone alignments	0	29	54
early edge tone alignments	21	188	84
Total	*103*	*225*	*152*

APPENDIX E

Figure E.1: Polarity contrast condition: Example pitch track of a nuclear pitch accent (i.e. H+L*n) realized on the non-finite verb (*tagliato* "cut"), spoken by an Italian female speaker. Annotations on the last tier are based on Grice et al. (2005).



APPENDIX F

F A SHORT DESCRIPTION OF THE AUTOSEGMENTAL-METRICAL THEORY AND TOBI

In the Autosegmental-metrical framework, intonation contours are described as sequences of high (H) and low (L) tones. When these tones occur on lexically stressed syllables, they are called *pitch accents* and are conventionally notated with the diacritic *. Pitch accents can be either monotonal (i.e., H* or L*) or bitonal (e.g., H+L*, L*+H). If these are bitonal, the starred tone indicates which of the two tones is associated with the stressed syllable. The non-starred tone is referred to as *leading* tone, if it precedes the starred tone (e.g., H+L*) and as *trailing* tone if it follows it (e.g., H*+L). Tones can also be found at the edges of phrases. These edge tones are called *boundary tones* and notated with the diacritic %. They are always monotonal (i.e., H% or L%).

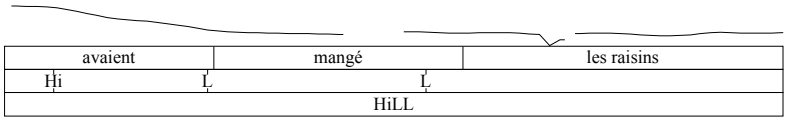
The standard transcription system ToBI (*Tones and Breaks Indices*, Silverman et al., 1992; Beckman & Ayers, 1997) was developed with the aim of facilitating the description of intonation framed in an Autosegmental-metrical account. Labeling standards have been defined for several languages (Jun, 2005). A complete ToBI transcription is made of at least three tiers: an orthographic transcription of the text, an annotation of the tones (pitch accents, phrase accents and boundary tones), and a break indices tiers, which serves to mark the perceived strength of the boundaries between different phrases in the utterance.

APPENDIX G

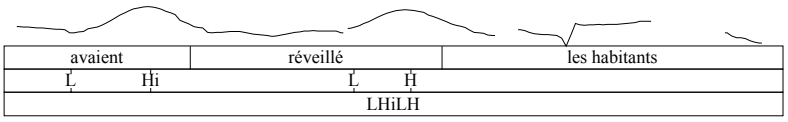
G PITCH TRACK EXAMPLES OF FRENCH VERUM FOCUS ON PHONOLOGICALLY HEAVY AUXILIARIES

Figure G.1(a)-(b): Pitch track example of Verum focus as a (focal) initial accent on the heavy auxiliary *avaient* "(they) had".

(a)

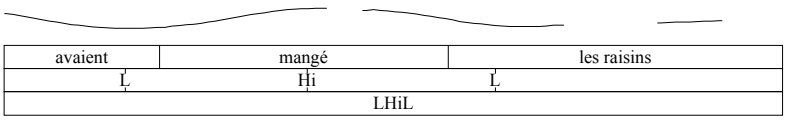


(b)



APPENDIX G

Figure G.2: Pitch track example of (focal) initial accent on the non-finite verb (*mangé* "eaten").

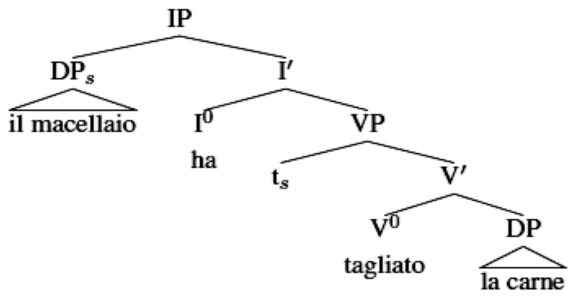


APPENDIX H

H SYNTACTIC TREE REPRESENTATIONS OF ITALIAN POLARITY CONTRAST SENTENCES[50]

For a neutral sentence, the syntactic structure that is sent to the phonological component looks like the one shown in Figure H.1.

Figure H.1: Example syntactic tree representation of the neutral sentence *Il macellaio ha tagliato la carne* ("the butcher cut the meat").



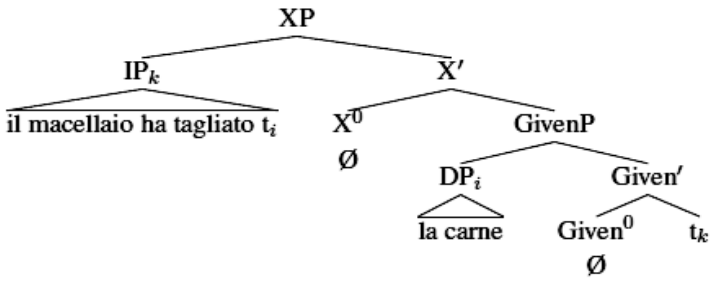
In polarity contrast contexts, one of the possible scenarios is that Italian speakers realize the nuclear pitch accent on the non-finite verb (e.g., *il macellaio ha TAGLIATO, la carne*). Here, since the DP *la carne* is given, it is moved into the Specifier-position of

[50] I thank Stefano Quaglia for helping me out to draw the syntactic tree representations shown in this Appendix and for our fruitful discussions on the syntactic and phonological aspects of the Italian polarity contrast cases analyzed in chapter 4.

APPENDIX H

GivenP (cf. Samek-Lodovici, 2006), leaving the trace *k* behind. The rest of the sentence, *il macellaio ha tagliato* (i.e., the so-called remnant), would be moved up into the Specifier of a distinct functional head Xº. The final output of this operation is given in Figure H.2.

Figure H.2: Example syntactic tree representation of the sentence *il macellaio ha TAGLIATO, la carne* (lit. the butcher has CUT, the meat, "the butcher DID cut the meat").

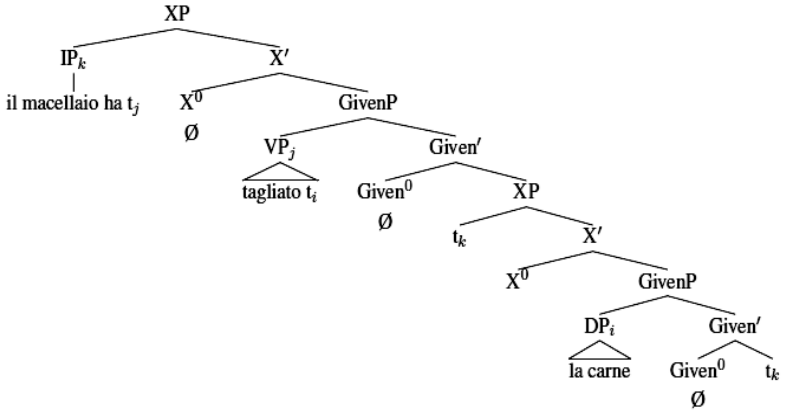


A further scenario comprises cases in which Italian speakers realize a nuclear pitch accent on the auxiliary verb (the carrier of the assertion component, e.g., *il macellaio HA, tagliato la carne*, section 1.1.3). Within the IP *il macellaio ha tagliato*, the non-finite verb *tagliato* represent given information, too. Hence, the VP [*tagliato i*] is moved to an additional [Spec(ifier), GivenP] (Givenº being recursive), while *il macellaio ha* would be "remnant-moved" to a further [Specifier, XP] (cf. Samek-Lodovici, 2006).

APPENDIX H

This amounts to two more syntactic movements, for a total of four operations (when added to the two ones from the previous scenario). The final structure is shown in Figure H.3.

Figure H.3: Example syntactic tree representation of the sentence *il macellaio HA, tagliato la carne* (lit. the butcher HAS, cut the meat, "the butcher DID cut the meat").



CURRICULUM VITAE

Giuseppina Turco was born in Borgo San Lorenzo, Florence (Italy) on September 3rd 1977. She received her Bachelor's degree in Foreign Languages and Literatures from the University of Salerno (Italy). She did her Master in Linguistics at the University of *Federico II*, Naples (Italy) and at the University of Paris VIII (France). In 2008 she was awarded a three-year scholarship from the ANR-DFG project to do a Ph.D. in the Acquisition group of the Max Planck Institute for Psycholinguistics in Nijmegen. Giuseppina will be working as a Post-Doctoral researcher at the Department of Linguistics of the University of Konstanz, Germany.

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