Introduction: The Road to Interfaces

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1   Introduction

This book presents contributions to the study of interfaces that have been shaped and inspired in profound ways by María Luisa Zubizarreta's research program. Since the 1970s, Zubizarreta's work has pioneered analyses in which the notion of interfaces (or levels of representation) played an essential role. Her research has fundamentally shaped the direction of Romance linguistics and generative grammar over this period. Her first book (Zubizarreta, 1987) explored in some detail issues related to the internal organization of the lexicon and its relationship to syntax. In her third book (Zubizarreta & Oh, 2007), the relationship between a constructional approach to meaning and the lexicon was further investigated by studying how verbal and predicate meaning components, such as manner and motion, articulate in Germanic, Korean, and Romance. In Korean serial verb constructions, manner and motion are encoded in separate morphosyntactic units, whereas in Germanic and Romance the same analysis holds but at a more abstract level of syntactic representation.

In another pioneering study on linguistic interfaces, Zubizarreta dissected the complex relationships between word order, prosody, and focus. Zubizarreta (1998) showed, in a rigorous and systematic manner, that certain word-order-related movements may be motivated by the prosodic requirements of a language. In this sense, such movements are required to satisfy purely interface conditions. Her innovative analysis opened up a very relevant, rich, and productive area of research over the next decades.

Although most of her work has focused on theoretical and experimental analyses of monolingual grammars, Zubizarreta has also made significant inroads in the area of L2 grammatical representation (cf. Cabrera & Zubizarreta, 2005a, 2005b; Ionin, Zubizarreta, & Bautista-Maldonado, 2008; Ionin, Zubizarreta, & Philippov, 2009; Nava & Zabizarreta, 2010; Oh & Zubizarreta, 2006; Zubizarreta, 2013; Zubizarreta & Nava, 2011). Bilingual grammars raise important challenges for the conception of grammar in the generative tradition – for example, how to represent lexical information and how to model the interaction between grammatical representations at different levels.

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Zubizarreta's most recent work (Zubizarreta & Pancheva, 2017a, b) has broken new ground in the interface between morphological paradigms and syntactic structure. Person-hierarchies have been known to interact with structure for a long time, most notably in Algonquian languages, where they result in so-called direct vs. inverse orders. Zubizarreta and Pancheva extend these insights to Paraguayan Guaraní, and propose that the direct and indirect orders stem from distinct Agreement relationships that correspond to different syntactic organizations of arguments. They further connect this syntactic analysis to an insightful parametric distinction between languages that are tense-oriented and languages that are person-oriented. Paraguayan Guaraní falls within the latter type. In Pancheva & Zubizarreta (2017), the authors re-conceptualize the Person–Case Constraint (PCC) as a phenomenon at the syntax–semantics interface, involving a mechanism for encoding point of view through manipulation of person features.

The goal of the present volume is to continue the exploration of major linguistic interface areas by bringing together research inspired by all three strands of Zubizarreta's research programs presented in this introductory section. Part I, the first part of this collection following this introduction, addresses issues of the syntax–lexicon interface and argument structure (Cabrera; Demonte; Mayoral Hernández; and Menon & Pancheva). Part II includes chapters on the syntax–semantics interface (Camacho; Ionin & Luchkina; and Schneider-Zioga). Part III focuses on issues of linearization (Masullo; McKinney-Bock; and Sánchez & Zdrojewski).

2   Syntax–Lexicon Interface

As noted above, Zubizarreta's (1987) seminal work set out to explore the division of labor between syntax and the lexicon, and characterized the latter as an elaborate and structured component, and not merely as an inventory of lexical items and their idiosyncratic properties. The lexicon was conceptualized as including mechanisms, similar to those of the syntax, that allowed for word derivation. At the lexico-semantic level, encoding the grammatically relevant properties of lexical meaning or predicate–argument relations, lexical processes such as causativization, and anticausativization, and their corresponding morphological markings, were to take place. The lexico-syntactic level, consisting of frames that mediate the mapping of arguments onto syntax, involved, for example, the derivation of verbal passive participles, and monoclausal causatives.

Zubizarreta's pioneering model set the stage for syntax-within-the-lexicon approaches to minimalist analyses – such as Hale & Keyser (1993, 2002), inspired by Larson (1988) – which seek out syntactic alternatives to θ-roles by proposing that they emerge from the structural configurations provided in l-syntax. Elaborating on the Hale & Keyser (2002) model and on Goldberg's

(1995) notion of construction as a meaning-carrying structure, Zubizarreta &
Oh (2007) investigated how manner and directed motion verbs are syntactically
encoded crosslinguistically, in Germanic, Korean, and Romance. They argued
that the compositionality of verbal meaning follows (or is read off) from the
compositionality of syntax.

The chapters by Mayoral Hernández, and Cabrera in this part are clearly
indebted to Zubizarreta's (1987) and Zubizarreta & Oh's (2007) insights.
Mayoral Hernández's study focuses on providing a unified account for
Spanish unaccusative verbs, in order to predict the morphological marking
and syntactic structure of those that participate in the causative alternation and
those that do not. It is proposed that all unaccusative constructions share the
same underlying representation that includes a lower complex Prepositional
Phrase (PP), which can surface as an overt PP, as a "reflexive" *se* clitic
coindexed with the subject, or as a path incorporated at the lexicon–syntax
interface. This account highlights the relationship between apparently different
morphological and syntactic markings in Spanish unaccusative constructions
by postulating two common lower PPs: one encoding direction, and the other
expressing location.

In the field of Second Language Acquisition (SLA), Cabrera's study
explores the acquisition of English lexico-syntactic and morphosyntactic prop-
erties of the anticausative sentences in the causative alternation by L1 Spanish
adult learners of L2 English. She investigates how the interaction between
lexico-syntactic meaning of anticausatives, similar in English and Spanish, and
their morphosyntactic marking, present in Spanish (*La ventana se rompió*) but
absent in English, the L2 input (*The window broke*), shapes interlanguage
development at different levels of proficiency.

The semantic distinction between individual- and stage-level interpreta-
tions has been shown to be pervasive in the syntactic distribution of several
phenomena. Demonte's chapter analyzes the thematic and obligatory control
properties of a subset of these environments – infinitival complements of
adjectives that show a systematic alternation in Spanish: *Juan fue inteligente
al aceptar este trabajo* "Juan was intelligent to accept this job" and *fue
inteligente (por parte de Juan) aceptar ese trabajo* "it was intelligent of
Juan to accept this job."

Menon and Pancheva's contribution explores crosslinguistic variation and
uniformity in the grammar of change-of-state predicates, specifically de-
adjectival degree achievements encoding color (*whiten*) in Malayalam. While
English degree achievements have comparative (*become whiter*) and positive
(*become white*) readings, Malayalam degree achievements only have the latter.
The authors propose that, differently from English, the structure of the base
form from which Malayalam degree achievements are derived has a norm-
related positive meaning (*white to a degree that exceeds the standard*).

3   Syntax–Semantics Interface

Much of the semantics research since the 1980s has focused on the mismatch between purely syntactic representation and Logical Form (LF), a structural representation that feeds into semantic interpretation. Such mismatches can be readily seen in the representation of quantifier scope, scope ambiguities, reconstruction, and ellipsis. All of these areas have been analyzed, at one time or another, as involving transformations in the structure represented by the surface structure of a sentence.

3.1   *Quantifier Interpretation and Quantifier Scope*

May's (1977) influential work proposed that quantifiers must bind a variable, and, in order to do so, they move at LF, in a movement known as *quantifier raising* (QR). Thus, the LF representation of *every piece of pie* in (1a) would be (1b):

(1)   a. The guests ate every piece of pie.
             b. $\forall x$: piece of pie (x) the guests ate (x)

Quantifier scope and its specific formulation as QR have figured prominently in the syntactic and semantic literature since the late 1980s. Theoretically, much of the discussion centered on whether this type of movement is subject to the same constraints as other cases of movement. Furthermore, quantified elements are often ambiguous: they can be interpreted as having wide scope (in the derived position) or as having narrow scope, in what looks like the original position, as illustrated in the following examples from Fox & Nissenbaum (2004):

(2)   Someone from New York is likely *t* to win the lottery.

             a. It is likely that there will be someone from New York who wins the lottery.
             b. There is someone from New York who is likely to win the lottery.

In the first case, *someone* has narrow scope with respect to the modal, whereas in the second case it can have narrow or wide scope. Assuming that *someone* has raised from the lower subject position indicated by "*t*" (whether by QR or by raising triggered by another property), the different scope readings are built on having *someone* in each position. The narrow scope interpretation in (2b) is called **reconstruction**.

QR and reconstruction are essential tools for investigating structural properties of clauses: a quantifier's scope indicates its relative structural position in a clause, so that wider scope implies a higher structural position and narrower scope, a lower one. For example, Zubizarreta (1998) uses quantifier binding of pronouns (a relationship subject to c-command, like QR) to probe into the

position of postverbal subjects in Spanish. In regular SVO order, a subject quantifier can bind a pronoun in object position:

(3)   El primer día de escuela, cada madre acompañó   a su hijo.
       the first   day of school, each mother accompanied to her son
       "On the first day of school, each mother accompanied her son."

When the subject is postverbal, these relationships are altered: a quantified object can bind a clause-final possessive subject, but a quantified subject cannot bind a possessive object:

(4)   a. El primer día de escuela acompañó   a cada hijo su madre.
           the first   day of school accompanied to each son his mother
           "The first day of school, his mother accompanied each son."
       b. * El primer día de escuela acompañó   a   su hijo cada madre.
            the first   day of school accompanied to her son each mother

Assuming that quantifier binding patterns are subject to c-command configurations, these patterns suggest that the subject is higher than (c-commands) the object in (3), but the object c-commands the subject in (4). Since the object is quantified in (4a), binding is possible, whereas a quantified subject cannot bind the object because it does not c-command it in (4b).

   Camacho's paper crucially relies on quantifier interactions to build his analysis about the quantificational status of negation in negative idioms. Lasnik (1975) observes that negation generally takes scope over a universal quantifier that is not clause-initial or clause-final, as illustrated in the following examples:

(5)   a. Often, I don't attend class. (*often* > ¬)
       b. I don't often attend class. (¬ > *often*)
       c. I don't attend class often. (ambiguous, depending on intonation)

Camacho notes the same facts for Spanish, and further extends this observation to N-words:

(6)   a. #No siempre digo nada.
           not always say nothing
           Only with constituent scope: *[no siempre]*
       b. Nunca digo nada.
           never   say nothing
           "I never say anything."

Based on this diagnostic, he concludes that N-idioms come in two varieties: those that pattern like N-words above, where negation is a true semantic operator, and those where negation does not have scope over the universal quantifier; for this type, he argues that they are not semantic operators.

3.2   Focus

Focus plays a central role in the articulation of interfaces, because in many languages it involves not only a certain meaning, but also prosodic correlates. As noted earlier, both aspects figure prominently in Zubizarreta's (1998) analysis of word-order alternations. From a semantic perspective, two main-stream theories of focus have been proposed: alternative semantics and structure propositions. According to the first account, the meaning of focus involves a set of alternatives to the proposition (cf. Rooth, 1985, 1992, and much subsequent work). Out of this set, focus singles out one (and consequently denies the truth of the others):

(7)   a. The squirrel ate $[nuts]_F$.
           b. {ate(squirrel, nuts), ate(squirrel, cake), ate(squirrel, leaves) . . .}

Structure meanings (cf. Krifka, 1992; Williams, 1997; Zubizarreta, 1998) partition a proposition into two parts, background and focus:

(8) $< \lambda x \ [ate(s, x)], n>$

The background introduces the proposition minus the focused part ("the squirrel ate something"), whereas focus identifies the variable ("something = nuts").

Focus and alternative semantics play an important role in McKinney-Bock's and Camacho's chapters. As mentioned earlier, Camacho's chapter assumes an analysis of N-words based on a set of alternatives introduced by a pragmatic scale.

McKinney-Bock's chapter presents an analysis of adjective ordering based on two ideas: first, extending a novel account of structure proposed in Vergnaud & Zubizarreta (2001), she argues that hierarchy is determined by the relative structural complexity of sister nodes, so that more complex adjectival constituents merge higher in the functional nominal hierarchy. Second, once this hierarchy is constructed, focus conditions permit multiple linear orderings, which allows McKinney-Bock to dispense with adjective movement as in more mainstream analyses.

In the area of SLA, Ionin and Luchkina's study probes Russian heritage speakers' and L2 learners' acquisition of quantifier scope interpretations that are constrained by two interface properties: word-order alternation (scrambling) and contrastive focus marking. This study aims at furthering the understanding of how syntax/prosody mappings are acquired by L2 and heritage speakers. The authors find that L2 learners and heritage speakers do not acquire the three-way relationship between word order, prosody, and quantifier scope, and attribute this finding to certain properties of the L2 input: the subtle relationship between these elements, and the relative infrequency of the relevant structures.

3.3   Predication

A very old notion, predication, captures the special relationship that exists between subjects and predicates, seen in the following examples:

(9)   a. [SUBJECT Katy] is [PREDICATE intelligent]
         b. I consider [SUBJECT Ana] [PREDICATE very wise]

From a semantic point of view, predication is a relationship between a property and an argument (the subject), cf. Chierchia (1985), but see also discussions as early as Plato and Aristotle. Several authors have explored how the semantic representation of predication correlates with syntactic structure (cf. Bowers, 1993; Citko, 2008; Déchaine, 1993; den Dikken, 2006; Rothstein, 1983, 2001; Williams, 1980, among others). In Williams's (1980) analysis, the predicate contains a variable that makes it a one-place predicate. Additionally, he argues that predication is subject to a mutual c-command requirement. Thus, (10) is ungrammatical because *green* is inside the PP and does not c-command *hay*:

(10)   *John loaded the wagon [with hay] [green].

In the case of clitics, Iatridou (1995) extends Williams proposal to cases of Clitic Left Dislocation (CLLD), assuming that the clitic left-dislocated element is the subject of a predication and the rest of the clause is the predicate. In this analysis, the clitic represents the predicate variable.

   Zubizarreta further develops the idea of CLLD involving predication through her proposal that there is a dedicated position that she calls CL. CL contains an operator that mediates the relation between a clitic dislocated expression (the subject of the predication) and the remainder of the sentence (the predicate). The clitic itself essentially plays the role of predicate variable in Zubizarreta's analysis of Clitic Left Dislocation, and it is syntactically lower, within the predicate, and thus distinct from CL. Zubizarreta argues that the clitic morphologically identifies CL. In her approach, there is no CL without a clitic to identify it morphologically, and the function of a pronominal clitic is to identify CL.

   Schneider-Zioga, focusing on Greek, points out and explores one logical conclusion of Zubizarreta's proposal: it must be that all pronominal clitics involve predication, even if there is no overt subject of predication evident:

(11)   *pro*$_j$ CL$_j$ [PREDICATE . . . clitic$_j$ . . . e^j . . .]

The CL position is equated by Schneider-Zioga with the functional head that is necessary to mediate predication in analyses of predication such as Bower's (1993) Pred[icate] Head or den Dikken's (2006) *relator*.

   Schneider-Zioga demonstrates the existence of a predication structure when pronominal clitics are involved by focusing primarily on cliticization within PPs. She notes one class of prepositions that takes pronominal clitics

and tonic pronouns, but does not take reflexives, and a second class of prepositions that does not take pronominal clitics, but does take reflexives and tonic pronouns.

She proposes that phrases headed by the first type of prepositions constitute a binding domain, but those headed by the second type of prepositions do not. Because no antecedent exists within the PP binding domain (headed by the first type of prepositions), reflexive complements are ungrammatical. Reflexives are licit as complements of the second type of preposition since the binding domain is larger than the PP and thus antecedents are available from outside the PP.

The first type of prepositions allows clitics because the clitic, subject to binding principles, is free within its binding domain (the predicate). The second type of prepositions disallows clitics because the clitic would be bound within its binding domain (the entire clause): the clitic would necessarily be co-indexed with, and thus bound by, the subject of the predication. Case theoretic evidence of a predication structure related to clitics is also discussed.

4   Linearization

Zubizarreta's (1998) seminal and influential research explores the interaction between clause-level stress (nuclear stress), word order, and information structure – in particular, focus. Specifically, she proposes that constituents marked for focus must bear nuclear stress, independently assigned by a prosodic algorithm:

(12)   The focused constituent must contain the rhythmically most prominent word, i.e. the word that bears the Nuclear Stress (NS).

(1998, p. 88)

In Spanish, the Nuclear Stress Rule (NSR) targets the right-edge of the in[tonational] phrase (cf. Nava & Zubizarreta, 2010; Zubizarreta, 1998, 2014; Zubizarreta & Nava, 2011). Whenever a focused constituent is not within the word that bears NS assignment, a p[rosodically]-motivated movement takes place. This work opened a fruitful exploration of the intersection of these three areas: prosodic properties, word order, and information structure (cf. López, 2009, among many others). Word order is taken up in the current volume by Sánchez and Zdrojewski, who analyze word-order variation and clitic doubling in different dialects of Spanish.

Specifically, Zubizarreta (1998) claimed that VOS word orders in Spanish were the product of VP *p*-movement to allow for the focused subject to receive NS. By contrast, Ordóñez (1998) proposes that VOS is derived by Object-Shift of O (and independent V-raising). Sánchez & Zdrojewski argue that both analyses are correct, only for different varieties.

Specifically, the Object-Shift analysis reflects the order in General Spanish, whereas the *p*-movement analysis accounts for the facts in Buenos Aires and Lima Spanish, although with added complexity as VOS is restricted in the latter varieties. Sánchez & Zdrojewski argue that the restrictions on VOS correlate with two other factors in these varieties: (1) an extended Clitic Doubling pattern (CD); and (2) the existence of a productive Clitic Right Dislocation (CLRD).

Masullo proposes an original analysis of so-called clitic climbing, namely the alternation in the position of a clitic when it appears with an auxiliary and a nonfinite form: *lo quiero ver* CL-want to see and *quiero verlo* want to see-CL "want to see it." In this account, the alternative word orders result from the order in which Merge applies: if the clitic merges first with the infinitive (which assigns its theta role), the result will be enclisis (*quiero verlo*). If the infinitive first merges with the auxiliary (yielding restructuring), then the clitic is associated with a complex verbal structure headed by the finite verb, therefore it must be proclitic.

Together, the contributions in this volume offer original approaches to an increasingly important and growing area of linguistic research: the interfaces between different modules of language and cognition. All of them draw directly or indirectly from Zubizarreta's inspiring career over the past forty years.

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