Specificity: the syntax/semantics mapping
A research project*

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Despite progresses in the last decades in the comprehension of specificity, the core questions of how it is encoded in the grammar and how it determines the syntax/semantics interplay remain open. This paper describes a new perspective for tackling these questions based on a fine grained syntax/semantics for noun phrases. The proposed format should be able to account for the variety of specificity notions advanced in the literature, as well as for their syntactic reflexes.

1. Introduction
Specificity is a semantic/pragmatic notion that distinguishes between different interpretations or uses of indefinite noun phrases like an article. Very roughly, an indefinite noun phrase is specific if the speaker intends to refer to a particular referent that she has in mind, whereas it is non-specific if she has no such referent in mind. This very general communicative option is mirrored in the linguistic category of specificity, which has become a central notion determining morphosyntactic, as well as sentence and discourse semantics phenomena.

Despite the advances in the understanding of specificity in the last decades, the core question of how specificity is encoded in the grammar, and how the interaction between its syntactic and interpretive effects arises remains open. The goal of the present paper is thus to propose a uniform and fine grained syntax and semantics for noun phrases, which provides a principled account of the different types of specificity identified in the semantic literature, as well as their syntactic reflexes.

* I gratefully dedicate this paper to Luigi Rizzi on this special occasion. The text describes a recently founded research project and this achievement represents the result of a path deeply influenced by Luigi. The impact of his ideas on the project is obvious, but his merits in my personal development extend to the clarity, dedication and enjoyability of his teaching and of his mentorship: his presence at all the milestones of my path (from the first Linguistics class to the doctoral defense) was an honor, and his constant support during the difficulties leading to these has been most precious to me. Over the years, his human qualities have made his company a true pleasure: his attitude is calm, cool and collected, while his wit is brilliant and lighthearted. I am grateful to Valentina Bianchi, Klaus von Heusinger, and Roberto Zamparelli for their help and support during the development of the research project presented in the paper. I wish to thank the Autonomous Province of Trento for providing the founding for implementing the project.
On the semantic side, various formally explicit definitions of the notion of specificity have been explored, while on the morpho-syntactic side various contexts where specificity plays a crucial syntactic role have been identified. To date, these two lines of research have been carried out mainly independently, without much focus on their interaction.

A deeper understanding of specificity can be achieved by bridging the disciplinary gap between formal syntax on the one hand, and semantics and formal logic on the other hand, thus advancing a more complete theory of the phenomenon. Recent developments in the study of the syntax/semantics interface put forward a fine grained theory of the internal structure of the noun phrase on the one hand, and of the syntax-discourse interface on the other hand. These would be the basic ingredients of the perspective that I wishes to illustrate here.

2. Seven types of specificity

In his recent review article, von Heusinger (2011) classifies the different notions of specificity advanced in the literature and identifies seven types of specificity.

(i) Referential specificity: Specificity in opaque contexts which expresses a contrast between a reading that allows existential entailment (1a.), and a reading that does not (1b.) (Quine 1956).

(1) a. Paula believes that Bill talked to an important politician.  
   (→ there is an important politician)  
 b. Paula believes that Bill talked to an important politician.  
   (but there is no important politician)  
   (von Heusinger 2001, ex. 1)

(ii) Scopal specificity: Specificity refers to the ability of certain indefinites to escape scope islands such as the conditional in (2a.), that a universal quantifier cannot escape (2b.) (Fodor 1982, Reinhart 1997 a.o.); it often also include referential specificity.

(2) a. If a friend of mine from Texas had died in the fire, I would have inherited a fortune. (possible reading: there is a friend of mine and ...)  
   b. If each friend of mine from Texas had died in the fire, I would have inherited a fortune. (not possible: for each of my friends, if one of them ...  
   (von Heusinger 2001, ex. 2)

(iii) Epistemic specificity: Specificity expresses the contrast between speaker's knowledge (3a.) and speaker's ignorance or indifference (3b.) about the referent of the indefinite (Fodor 1982, Schwarzchild 2002 a.o.).

(3) a. A student in Syntax 1 cheated in the exam. I know him: It is Jim Miller.  
 b. A student in Syntax 1 cheated in the exam. But I do not know who it is.  
   (von Heusinger 2001, ex. 3)

(iv) Specificity as familiarity: Specificity is sometimes associated with different types of familiarity such as D-linking, partitiv ity, and presuppositionality: the indefinite can be part of a previously introduced set as in (4a.), as opposed to (4b.), where there is no such familiar set (Pesetsky 1987, Enc 1991, a.o.).

(4) a. Fifty students entered the room. I knew two girls.  
   b. Fifty students entered the room. They greeted two girls (already in the room).  
   (von Heusinger 2001, ex. 4)
Specificity as topicality: Specificity is related to topicality as in (5a.), where the topical element can be understood as a specific expression (Cresti 1995, Endriss 2009, a.o.).

(5) a. Some ghosts live in the pantry; others live in the kitchen.
    b. There are some ghosts in this house.

(v) Specificity as noteworthiness: This notion assumes that the presentative this in (6) signals that the speaker intends to assert a noteworthy property of the referent, as in (6a.), while (6b.) is reported to be infelicitous since no such property is mentioned (Ionin 2006, a.o.).

(6) a. He put a/this 31 cent stamp on the envelope, and only realized later that it was worth a fortune because it was unperforated.
    b. He put a/#this 31 cent stamp on the envelope, so he must want it to go airmail.

(vi) Specificity as discourse prominence. This notion refers to an aspect of discourse prominence, namely “referential persistence” or “topic shift”, i.e. the potential of an indefinite to introduce a referent that will be mentioned again and may even become a topic in the subsequent discourse (Givon 1983 a.o.)

(7) a. There was a king and the king had a daughter and he loved his daughter ...
    b. There was a king and # the season was very short and hot ...

A particularly recent and promising development von Heusinger (2011) identifies in his review is the combination of discourse prominence and specificity which is opening a new research area that goes beyond the classical treatment of specificity. In so far as these notions are relevant for morpho-syntax, the question arises of how they are encoded in the grammar. These notions have been advanced mainly in the semantic literature; at the same time syntacticians and morphologists, have come up with a series of operational tests of specificity, and have explored the internal structure of the noun phrase, as well as of the syntax/discourse interface.

3. Specificity in morpho-syntax
Since the late 1980s syntacticians have recognized the crucial role of specificity in many syntactic phenomena (e.g. for anti-reconstruction see Heycock 1995, for weak island extraction see Cinque 1990, for past participial agreement in French see Obenauer 1994), and have often aimed at integrating specificity in their theory. Nevertheless, these efforts commonly relied on the intuitive notion of Discourse-linking proposed by Pesetsky (1987), without a critical assessment of the semantic notions and analyses of specificity that have been developed in semantics and philosophy of language tradition. Pesetsky (1987) showed that D-linking has important consequences for Logical Form. This work marked the beginning of a new trend in the study of syntax: for a long period before, specificity was shelved as a discourse property by generative grammarians, not part of the study of core syntax. Pesetsky (1987) broke with this tradition and paved the way for a series of studies that aimed at integrating this notion in the syntax, in order to account for a range of empirical phenomena.
To illustrate a purely morpho-syntactic context where it has been argued that the specificity of the extracted noun phrase plays a crucial role in determining grammaticality, let's consider past participial agreement in French. Obenauer (1994) observes that past participle agreement triggered by object wh-movement in French interrogatives is possible only with specific noun phrases. *Combien de fautes* in (8a) can only have a specific interpretation. As a matter of fact, if a modifier which excludes this interpretation is inserted (*up to how many and fewer*), agreement is ungrammatical (8b-8c).

(8) a. Dis-moi combien de fautes tu as faites.    Specify
    tell me how many of mistakes you have made-

b. Jusqu'à combien de fautes ont-ils fait*(es), vos élèves?
    up to how many of mistakes have-they made-*((agr)), your students?

c. Combien de fautes en moins a-t-il fait*(es) cette fois?
    How many of mistakes fewer has-he made-*((agr)) this time?

(Obenauer 1994, p. 173, ex. 16,17a.17b)

With respect to such purely morpho-syntactic effects, the question arises of which notion of specificity is relevant, and especially how these effects come about. Summarizing, I have illustrated two challenges for the current understanding of specificity, from a semantic and a syntactic perspective respectively:

a. How are the different notions of specificity encoded in the grammar?

b. How do the morpho-syntactic effects of specificity arise?

### 4. Goals

The goal of the present paper is to illustrate how these two questions can be tackled by bridging the disciplinary gap between syntax and semantics. In particular, I wish to advance a uniform theory of the internal structure of the noun phrase (which should account for specificity types (i), (ii), (iii), (iv) in Section 2), and to show how the interaction of this theory with the fine grained structure of the left periphery (which should account for specificity types (v), (vi), (vii) in Section 2) can provide a principled theory of the syntactic and semantic phenomena determined by the linguistic category of specificity. In a nutshell, my hypothesis is that combining a semantically motivated theory of referential indexes on quantificational noun phrases, with a syntactically rich Logical Form representation, a theoretically principled and empirically adequate theory of specificity is possible.

### 5. The syntax/semantics analysis of noun phrases

In his study on the syntax/semantics of definite noun phrases, Elbourne (2005) proposes that indexes, necessary for obtaining bound readings, are phonologically null noun phrases, but present in the syntactic representation of determiner phrases (DPs).

(9) [THE i [[NP]]

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1 Actually, Obenauer (1994) notes that these data are quite delicate, see his discussion for further details.

2 According to the so called DP hypothesis Abney (1987) the determiner, and not the noun, is the head of the noun phrase, thus determiner phrase.
However, this enriched format leaves open the issue of what the structure of indefinites is. Extending Elbourne's (2005) proposal for definite descriptions (9), I will elaborate a format for partitive indefinites ((iv) in Section 2), then I argue that it extends to epistemic specificity ((iii) in Section 2), which in turn subsumes scopal specificity ((ii) in in Section 2) and referential specificity ((i) in Section 2). Finally, I wish to propose that the definitions and effects in Section 2 involving informational notions, namely (v), (vi), and (vii), can be derived from the interaction of the DP format and the fine grained structure of the syntax/discourse interface. The interaction of specificity and discourse is currently a core research question both in the semantic, as well in the syntactic studies (von Heusinger 2001).

Definite and indefinite determiners select different types of indexes. Definites select a referential index \( i \) (9). Indefinites, due to their non-referential nature, do not select such an index, thus their format can be preliminarily represented as in (10), where the referential index is missing.\(^3\)

\[(10) \ [Q \ [NP]] \quad \text{Preliminary format for indefinites}\]

Nevertheless, indefinites do select an index, but crucially not an \( i \)-index. Consider the examples in (11) (Falco 2010).

\[(11) \quad \text{Discourse context: A: Ho visto dei cani.} \]
\[a. \ B: \text{Anch’io ne ho visti.} \quad \text{Also I have seen.}\]
\[b. \ B: \text{Anch’io ne ho visti alcuni (dei cani che hai visto).} \quad \text{Also I have seen some (of the dogs that you have seen).}\]

The anaphoric reading is absent in (11a), in other words the set of dogs seen by the speaker A is different from the set of dogs seen by the speaker B. On the contrary, it can be the same set of dogs in the case of (11b), that is to say the anaphoric reading is possible. Since the difference between the minimal pair (11a)-(11b) is the presence of \textit{alcuni} (some) in (11a), the anaphoric reading is dependent on its presence. Since the anaphoric reading depends on the presence of an index, it is the indefinite that selects a set-denoting index. Therefore, indefinites select a different type of index, whose interpretation can be given by a set formula introduced by the previous discourse. Consequently, the format in (10) must be extended by introducing the second index \( j \) denoting a set (12). In the case of anaphoric reading of (11b), the index is interpreted using the linguistic material from the previous discourse \textit{dogs that you have seen}.

\[(12) \ [Q \ [[NP][j]]] \quad \text{Format for indefinites}\]

Given this basic format, the issue of how to formalize it precisely both syntactically and semantically remain open for further research. Syntactically, in (12) \( j \), the second index, corresponds to a - possibly phonologically null - phrase, \( \text{NP2} \) in (13), as the definite NPs in Elbourne's (2005) proposal, but the precise syntactic structure for this format remains to be explored at this stage.

\[(13) \ [Q \ [[NP1][NP2]]] \quad \text{Syntactic format for indefinites}\]

From the format for partitive specificity, epistemic specificity is derived once we consider the possibility that implicit parameters can be relativized to the bearer of an attitude in the case of indefinites: Schwarzchild (2002) \textit{singleton} analysis. In turn, this possibility explains the exceptional scopal behavior of indefinites: \textit{singleton} are existential Qs whose domain is restricted to a singleton, thus they\(^3\) Q stands for quantifier, since it is assumed here that indefinites are existential quantifiers.
are scopally inert. This is a new line of inquiry into specificity and its effects that seems very promising. Crucially, the perspective outlined in this section opens up the possibility of interaction between nominal specificity and discourse prominence, which will be tackled using the tools and discoveries on the fine grained study of the left periphery.

6. The syntax/discourse interface
Recent studies on the syntax/discourse interface following Rizzi (1997) have proposed that the left periphery of the clause (the complementizer phrase - CP) is the syntax/discourse interface, that is the place where the syntax instantiates, crucially using its proper mechanisms, notions necessary for the discourse semantics interpretation. In particular, Rizzi (1997) proposes that there are information structural categories encoded in the left periphery in the form of Topic and Focus and contrastivity. By shedding light on the interaction of discourse structure, discourse topics and specificity (for a seminal work in this direction see Leonetti 2010), the possibility of explaining type (v) specificity as topicality, (vi) specificity as noteworthiness and (vii) specificity as discourse prominence, as consequences of movement of the enriched noun phrase, or of a part of it to these left peripheral positions can be explored.

7. Conclusions
The majority of the research on specificity has tried to shed light on the issue either from a morpho-sintactic perspective, or with a logic-semantic approach. Nevertheless, the question of how specificity is encoded into the grammar and the how the different of specificity are derived, can be better tackled with an holistic approach, combining intuitions from both these research areas. Different approaches have given a big contribution to the comprehension of specificity and of the syntax and semantics of the noun phrase. The idea that indefinites possess a special kind of index quasi-referential, syntactically realized, and whose denotation is derived from the discourse, opens a new area of research connecting specificity to the structure of the noun phrase. This allows to link the study of specificity to the structure of the left periphery, thus to explore the connection between the two from a new perspective.

References


