Perspectives on Language Research

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Edited by

Marinela Burada, Oana Tatu
and Raluca Sinu

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CHAPTER I:

ANALYZING LANGUAGE STRUCTURE

ANALYZING LANGUAGE STRUCTURE. INTRODUCTION

MARINELA BURADA

This chapter illustrates the different vantage points from which languages and language-related phenomena can be explored and explained. It begins by considering the dynamics between theory and practice in linguistics, verifying, yet again, that "all grammars leak", as Sapir so aptly put in 1921; the chapter then proceeds with investigations of specific issues in the authors' native and non-native languages, and concludes with a critical survey data on the outcomes of language contact situations in the Pacific area.

In **Constraints of UG on its Explanatory Adequacy** (Shinian Wu) the author takes a critical approach to Universal Grammar (UG) and the Transformational-Generative Grammar (GTG) associated with it, calling into question, from the applied linguist's vantage point, its explanatory adequacy. To be fair, the underlying idea here is that theory and practice are essentially in need of each other: practitioners and language acquisition researchers rely on UG in order to account for the language behaviours of different types of learners (children, adults, native, non-native), while the empirical data originating from everyday language use inform the theory and, occasionally, shed useful light on its limitations. This is the case of Wu's article, that brings up for discussion four principles (Subjacency, Structure Preservation, Projection, and Empty Category) and two parameters (Pro-drop and Head-directionality) considered key notions in UG. Using examples from different languages, the author holds up to light instances of language use that are unaccounted for or underdifferentiated by grammar. The reasons why this should be the case are laid out in a convincing manner. First, at the centre of UG is the idealized language user, a representation so often disproved by practice; second, the overreliance of UG on well-formedness has left semantic complexities conveniently in the background and third, the language used in a whole array of communicative and pragmatic functions and contexts tends to prioritize meaning-making over grammaticality.

Parts versus Wholes. The Position of Romanian in the Bigger Picture of Partitivity (Mihaela Tănase-Dogaru) approaches the very complex issue of the part-whole relation cross-linguistically, from typological and syntactic perspectives. Based on relevant constraints, the author distinguishes between standard partitives and pseudopartitives, and details their typology. She presents the strategies used by different languages to morphologically mark partitivity i.e., the possessive strategy, the separative strategy and the locative strategy (Seržant 2021). In the first case, the genitive functions as a possessive strategy; in the second, the separation metaphor is exploited and, in the third, the syncretic marking of the partitive and locative markings are used. Then, the author demonstrates that Romanian, with its two specialized prepositions (*din* PART.of-in, *dintre* PART of-among) for standard partitivity, employs the separative strategy, which is typical for Eurasia. The paper also looks at particular types of classifiers that occur in first position in the (pseudo)partitive structure in Romanian i.e., silent nominals, size nominals, quantified nominals, and collective nominals, illustrating the shift in their status from lexical to functional elements, evolution which entails new meanings, allowing speakers of Modern Romanian to convey different attitudes.

In **Semelfactivity Patterns** (Ioana Stoicescu), the author discusses semelfactivity from a morphological and semantic perspective in Hungarian and Polish, two languages which mark it overtly alongside iterativity. After providing a general description of semelfactive verbs, the paper moves to semelfactivity in Hungarian, presenting classes of semelfactive verbs, and the morphological markers of semelfactivity. Then it turns to semelfactivity in the Slavic languages, where a rich derivational system is used to mark semelfactivity and iterativity, with a focus on Polish. In the latter language, the term semelfactive refers to perfective verbs containing the suffix *-ną-* (e.g. *klasnąć* “clap once”), and derived from imperfective verbs. The author concludes that in the two classes of languages, suffixes are used to derive the single event reading for semelfactive verbs, which then form doublets with improperly iterative verbs (Hungarian) or iterative/temporally neutral imperfective verbs (Polish); in both types of languages, semelfactives can be used to derive iteratives.

Concentrating on contemporary (mainly spoken) Romanian, **Remarks on the Pragmatic Functions of the Romanian Prenominal Distance Demonstrative** (Veronica Tomescu) draws attention to the fact that this element has started to acquire a marked pragmatic function. The author surveys the uses of the prenominal distance demonstrative based on a corpus of 300 examples compiled from various recent sources (including

transcripts of spoken language or spontaneous utterances from sports commentaries on television, Facebook comments, Whatsapp messages, comments on internet forums, etc.). She also presents the results of a small-scale survey in which respondents were asked to read pairs of sentences, one with the demonstrative, the other without it, and to state whether they prefer one over the other. First, the paper focuses on the deictic and contextual uses of the demonstrative, then, on its pragmatic functions, such as adding emphasis or negative evaluation to the utterance, showing irony, or avoiding cacophony. The author argues that, in some instances, the demonstrative seems to be (partially) bleached, functioning as a redundant filler or hesitational device. The results of the survey show that younger speakers, unlike the older ones, notice no difference between the statement with the demonstrative and the one without, prompting the conclusion (also supported by the analysis of the corpus) that the demonstrative seems to be heading towards grammaticalization, which involves scope expansion and semantic bleaching.

Contact Languages in Papua New Guinea (Alina Laura Chițu) takes the reader into the realm of contact linguistics. The author surveys the existing data on three major pidgin languages used as *linguae francae* in Papua New Guinea: Tok Pisin, Hiri Motu, and Papuan Pidgin English, all emerging within the timespan of a century and a half. Tapping into the available sources of information, the overview conducted here takes a diachronic approach by looking into the origins of these languages, their geographic distribution, the sociocultural background responsible for their evolution, the functions that they served in the community at large and the varieties that they eventually gave rise to. These variables are used to explain why the three contact languages in question fared so differently across time.

CONSTRAINTS OF UG ON ITS EXPLANATORY ADEQUACY – A REVISIT FROM AN APPLIED LINGUISTIC PERSPECTIVE

SHINIAN WU

Abstract: Underlying the principles of Universal Grammar (UG) is the theoretical proposition that all natural languages are syntactically constrained in predictable ways, and linguistic variation, if any, occurs in binary parameters. Language learning and acquisition, therefore, follows such principles and parameters. This theory-driven approach is essentially based on Chomsky's Innateness Hypothesis which explains how children can acquire language efficiently and effortlessly without being explicitly taught language. However, language is also undeniably social in nature and serves various communicative and pragmatic functions that can yield empirical language data not quite in alignment with UG principles and parameters. This paper critically examines UG's theoretical claims and its explanatory adequacy of a key set of principles and two parameters from the vantage point of both theory-internal perspectives as well as the more applied explanations rooted in real-life language use.

Keywords: Universal Grammar (UG), parameter-setting sociolinguistics, pragmatic contexts

1 Introduction

In the field of language acquisition research, Universal Grammar (UG) (Cook and Newson, 2007) is arguably one of the most influential theories that tries to explain the uniform nature of how children learn their mother tongue and by extension, how adults learn a second language, assuming UG principles are still operative in adults beyond the Critical Period (Lenneberg, 1967). Chomsky's premise for the theory is "the poverty of the stimulus", which White (2003) more succinctly granulated as representing the so-called three logical problems for language acquisition that no language socialization theory presumably could explain: 1) underdetermination, 2) degeneracy, and 3) lack of negative evidence. That

is, the input environment does not provide the child with sufficient linguistic data for the full development of a language; spoken language in natural and casual social interactions is often grammatically too haphazard and fragmented for the child to grasp the complete grammatical system of the input language; and natural language acquisition and use are such that the child rarely if ever receives overt correction when errors occur. Yet, all children, barring extraordinary circumstances that prevent them from natural exposure to language (Curtiss, 2014), succeed in acquiring their mother tongue, and such language acquisition follows a predictable pattern of linguistic development exhibiting a set of principles and limited parametric variation through acquisition of all natural languages. Universal Grammar, formulated as consisting of a set of general principles and parameters, is postulated as offering explanatory adequacy beyond knowing merely *what* happens in the acquisition process (observational adequacy), *how* it happens (descriptive adequacy) but furthest, *why* – the ultimate goal of seeking an optimal theory of language and language acquisition.

This paper will examine critically the theoretical claims of UG and the explanatory adequacy of a key set of its principles and two parameters, from a theory-internal perspective, as well as from the point of view of the more applied explanations related to real-life language use.

2 Top-down reasoning

One crucial intellectual tenet of theoretical linguistics is the top-down rationalization based on scientific, testable hypotheses. Hans-Jörg Schmid (2012) describes linguistic theory as being more or less the same in spirit as Einstein's theory of relativity or Newton's theory of gravitation, both attempting to identify and formulate underlying rules and principles of a natural phenomenon, although he omits one important philosophical difference: Einsteinian physics, like theoretical linguistics, is a top-down science, whereas Newtonian physics is empiricist in perspective. UG as a component of theoretical linguistics is a postulated hypothesis about "how language works" in the mind of an *ideal speaker,* while applied linguistics, like Newtonian physics, relies on empirical evidence and experiences as the basis for formulating rules and principles. Therefore, Noam Chomsky's UG is to Einstein's theory of relativity what Dell Hymes' (1992) theory of communicative competence is to Newton's theory of gravitation. Under the former, language acquisition must have a theoretical premise, and if this premise is true, then the conclusions derived therefrom must also be true:

Premise: Children are not taught language; they acquire it on their own under requisite conditions.

Conclusions:

1) Children possess an innate ability to acquire language (Moskowitz, 1998)
2) This ability is regulated by and constrained by the neurological and biological processes in a "back box" known as LAD (Language Acquisition Device) (Briscoe, 2000).
3) Language acquisition follows a fixed and predictable developmental path as a result (Clark, 2009)
4) There must be a set of rules that guides and constrains this development (no "wild grammar") (Krashen, 1982)

Language acquisition in this intellectual orientation naturally must be explained by the scientific discoveries of the inherent internal structure of the language that children acquire seemingly effortlessly. And UG is argued to provide such an explanation with the following operational premise:

1) Any syntactic system of any language operates on a limited set of principles.
2) Any syntactic system of any language can vary on a limited set of binary parameters.
3) Any syntactic system of any language is necessarily constrained.
4) Any syntactic system of any language is hierarchically organized.

In other words, UG is characterized by a set of principles while also allowing for limited variability for some features of specific languages with an effort to account for empirical data which may otherwise defy the seemingly uncompromising concept of linguistic "universality" based on the uniform human biology and neurology.

One of the major linguistic implications of the UG framework, therefore, is that the system of any language must necessarily be small in size, mostly in a syntactic sense—small enough for anyone to acquire it with ease, which explains how children can "pick up" a language quickly and efficiently. This universality of acquisition occurs regardless of the specific languages being acquired while permitting a limited set of peripheral features that may vary.

3 Principles of UG in clash with empirical evidence observed by applied linguists?

In general, the principles of UG are postulated to constrain what is possible in a human language in a generative process (Radford, 2007) in which a finite number of rules of grammar generates a non-finite number of syntactic variants, or more commonly known as sentences. The most parsimonious version is the minimalist program Chomsky proposed in 1993, which essentially reduces syntactic analysis to a single operation of "move and merge" (Hornstein, 2008). Of concern to applied linguists are the principles that empirical data from real-world language use may not support. It does not mean that an anecdotal example can negate the validity of a linguistic theory, but it does mean that any sound theory of language must be subject to vigorous empirical tests, especially when deductive logic is involved in the postulation of the UG principles based on the innateness hypothesis. The following principles are discussed in relation to empirical investigation of real-life language in social and pragmatic contexts.

4 The Subjacency Principle

The Subjacency Principle essentially imposes constraints on the movement of a syntactic constituent beyond its "bounding category" in the Government and Binding theory, part of UG (Lasnik, 1988):

1) Maria believes that Jose studied history in college.
2) What does Maria believe that Jose studied _____ in college?
3) Maria asked when Jose studied history in college.
4) *What did Maria ask when Jose studied ____ in college?

Unlike 2) where the complementizer "that" is not considered as a bounding node due to its optionality, the ill-formedness of 4) is postulated as a violation of the Subjacency Principle because the WH substitute of "history" has moved out of its bounding category of the when-clause, which is an inviolable syntactic constituent, as illustrated in the following.

The ill-formedness of 4) assuredly validates the underlying principle governing the movements of syntactic constituents in the Transformational-Generative Grammar since no native speaker of any variety of English will judge the sentence as well-formed. Likewise, a similar example of the extraction, this time, of the subject of the when-clause is also forbidden:

5) *Who did Maria ask when ____ studied history in college?

Both 4) and 5) show that the movement of either the subject NP or object NP within the same bounding category is not possible, and if tested with native speakers of English, neither will be judged well-formed in grammaticality judgement tests.

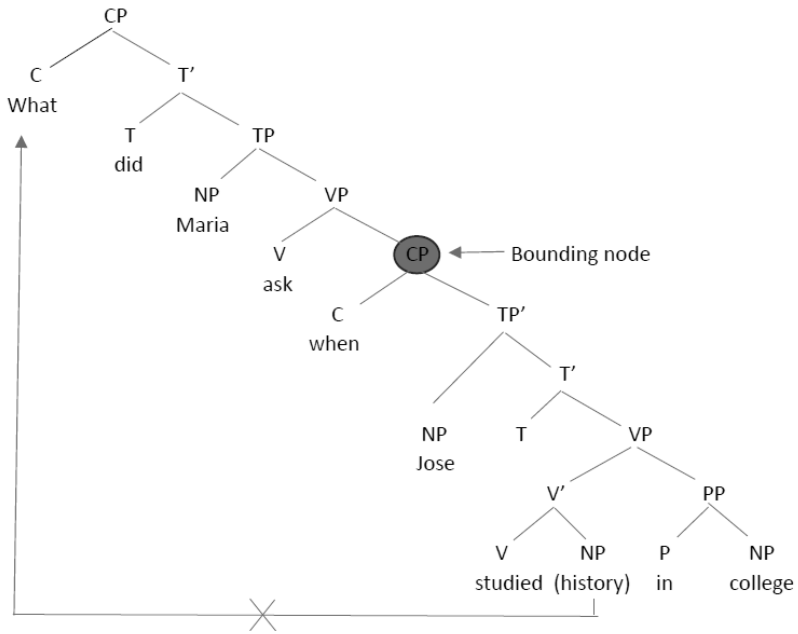

Figure 1. Representation of example 5)

In some instances, however, ambiguity of interpretation may arise as native speakers improvise on language use in communicative contexts in which meaning-making often overrides grammaticality. Language is also sociolinguistically shaped and pragmatically driven, as often argued by applied linguists. The Subjacency Principle may be called into question when a sentence like the following is produced:

6) Andrew thinks that Maria doesn't know how to do the job.
7) What does Andrew think that Maria doesn't know how to do___?
8) What is it that Andrew thinks that Maria doesn't know how to do ___?

If we consider "how" as one of the seven WH interrogative words in English, albeit orthographically noncompliant with the rest, then 7) and 8) would be examples of noncompliance with the Subjacency Principle. One could argue for an alternative explanation while still maintaining the integrity of the UG principle, but for applied linguists who view and evaluate linguistic theory based on empirical observations of language learners, both children and adults who engage in everyday conversations, the question is more about how they "figure things out" in both the acquisition (linguistic) and socialization (empirical) processes, the latter weighing more heavily with those interested in explaining what learners do in real life rather than how logically sound a linguistic theory is. The very notion of grammaticality in testing the principles of UG is less relevant to applied linguistics since language variation (e.g., dialects and registers) and change (e.g., medieval vs. contemporary) are embedded in the social and historic fabric of human development. In addition, those who observe language acquisition and development in specific social contexts are inherently interested in how learners produce language in response to their interactive environments.

Perhaps a simpler example, which could raise the question of whether adult learners of English as a second language would violate the Subjacency Principle, is more relevant to language teachers who constantly observe learner production errors in speech and writing:

9) Maria bought the book.
10) What did Maria buy ___?
11) Who bought the book?
12) Who bought what?
13) *What did who ___buy ___?

The well-formedness of 12) and ill-formedness of 13) illustrate an example of a second WH-substitute moving into the sentential subject position C (see Figure 2) already occupied by another WH-substitute, resulting in the ungrammaticality of 13), as illustrated in Figure 2. Syntactic logic aside, 13) also violates the Subjacency Principle in that the WH-substitute tries to move out of the already fully established CP.

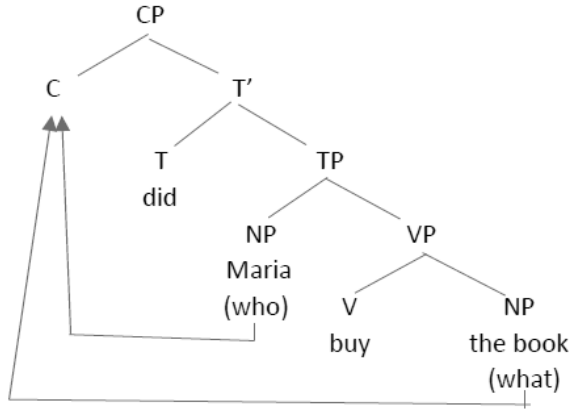

Figure 2. Representation of a second WH-substitute moving into the sentential subject position C

It can be seen that the ungrammatical outcome 13), if it occurs, is probably the function of bottom-up, inductive reasoning if learners cognitively move from 9) to 13) sequence in actively constructing a new grammatical form based on their previous knowledge of WH-question formation. Goldberg (2005) points out that any linguistic pattern is a construction that pairs itself with some semantic and discourse function, in contrast with Chomsky's approach to syntactic principles separating well-formedness from lexical semantic and grammatical semantic dimensions (Cruse, 2011), hence his famed "colorless green ideas sleep furiously (Chomsky, 1957). The "active construction of the grammar" theory (Moskowitz, 1998) captures how children, and for that matter, adults, too, could imaginably produce "what did who buy" as a pragmatically acceptable echo question in an appropriate intonation in violation of the Subjacency Principle.

5 The Structure Preservation Principle

The notion of structure preservation is based on the idea that a well-formed sentence is built on categories of syntactic constituents instead of individual lexical items, contrary to the typical layperson's answer to the question "what are the basic building blocks of a sentence?" – words, something commonly taught in elementary or middle school language arts classes. Syntactic constituents are structural units, such as phrases and clauses, delineated in the framework of Phrase Structure Grammar, which

Curzan and Adams (2012) argue to reflect how our mind works when organizing hierarchical components of language (also see a more comprehensive account of PS grammar by Bennett, 2022). The sentence "the Romanian students were eating the pizza in their dorm" should have the following constituents:

S→ NP+VP
NP→ Det+ ADJ+ N
VP→ V+NP+PP
PP→ P+NP

These phrase structure rules are supposed to reflect the deep-level base structure (hence, D-structure) of a surface-level sentence (hence, S-structure) in the Generative Transformation framework (Radford, 2004). Anyone who studies linguistics knows these phrasal categories beginning with the sentence (S), although modern syntactic theory has reconceptualized and relabeled it as a complement phrase (CP), an inflectional phrase (IP), or a tense phrase (TP) in better capturing the binary nature of human syntax, e.g., in the X-bar theory (Lowe and Lovestrand, 2020).

According to the Structure Preservation Principle, the structural integrity of a D-level phrase structure is preserved when it is transformed into a different S-structural form:

14) The Romanian students were eating the pizza in their dorm.
(active declarative)
15) The pizza was being eaten by the Romanian students in their dorm.
(passive)
16) It was the Romanian students who were eating the pizza.
(it-cleft)
17) What the Romanian students were eating in their dorm was the pizza.
(WH-cleft)
18) What was eaten by the Romanian students was the pizza.
(WH-cleft passive)

The following transformation, in violation of the Structure Preservation Principle, results in an ill-formed outcome due to the "illegal" breakup of the NP "the Romanian students", which alters the intended meaning of the original sentence:

19) *Were the students eating the Romanian pizza in their dorm?

However, the Structure Preservation Principle has its problems as some transformational processes may result in unintended S-level consequences:

20) Everyone in the room speaks two languages.
21) Two languages are spoken by everyone in the room.

The passivization of 20) that results in 21), while preserving all the phrasal categories, produces a different meaning due to the narrowing of the semantic scope of a numerical subject (Cruse, 2011). Therefore, the same noun phrase (NP) as the complement of the verb and as a subject of the sentence projects different lexical senses as a result of passivization. While most native speakers of English will realize the semantic implications when reminded or prompted, it is not clear whether language learners, children and adults, can quickly comprehend and process the unique semantic outcome of the passive transformation, a concern for applied linguists and language teachers. After all, Generative-Transformational Grammar is concerned with structural integrity more so than with semantic nuances. The transformative framework premised on the theorem that "meaning is base-generated" (Radford, 2004) must be field-tested. Applied linguists and teachers solve real-world problems in language learning and teaching. The UG principle may be explanatorily adequate in the formulation of a theory, but the notion of the "ideal speaker" as conceived by Chomsky and his disciples is less apparent and even dubious to teachers, learners, and applied linguistics researchers.

Even if the meaning of the D-structure level of a sentence is preserved through passive transformation, as illustrated by 23),

22) Jose has been reading that book for three months.
23) ? That book has been being read by Jose for three months.

while technically, 23) should remain both grammatical and interpretable, no one in the English-speaking world will ever utter such a passive sentence. In other words, the passivization has over-generated a syntactic outcome.

Another challenge to the Structure Preservation Principle is related to the syntactic behaviour of certain verb subcategories. Traditional grammar often tells language learners that only "transitive verbs" can be passivized (Klammer et al, 2013). Hence, passivizing a sentence while preserving the D-structure level base form, like the following, is deemed ill-formed:

24) Adela went to Bucharest last week.
25) *Bucharest was gone to by Adela last week.
26) Anton was looking for a new book.
27) *a new book was being looked for by Anton.

While the phrase structure of each of the above is being preserved, the transformation outcome is ungrammatical.

However, the following presents an intriguing case for both theoretical and applied linguists:

28) Gonzalez is looking after the patient.
29) The patient is being looked after by Gonzalez.

One may present an amendment to the Structure Preservation Principle by pointing out that *look after* is not a phrasal structure but consists of the intransitive verb *look* and a preposition *after*, as opposed to the Verb + Particle structure known as phrasal verb in traditional grammar, as shown below:

30) Joe ran up the hill.
(S→ NP VP VP→ V PP PP→ P NP)
31) Joe ran up the bill.
(S→ NP VP VP→ V + Particle NP)

Such structural analysis stipulates that *up* in 30) is a preposition while *up* in 31) is a particle, which is a common analysis in English-as-a-second language classes where grammar is taught. A constituent test seems to prove it:

32) Up the hill Joe ran.
33) *Up the bill Joe ran.

While *up* can syntactically function in different ways depending on its fluid lexical category, we still cannot quite explain 26) and 28) when we consider structure preservation, as both resultant sentences through the cleft transformation turn out to be well-formed:

34) It was a new book that Anton was looking for.
35) It was the patient that Gonzalez is looking after.

where *after* in 35) is typically treated as a particle, not a preposition, as contrasted by *for* in 34), which is a preposition, not a particle, unless *for* as preposition can be separated from the verb *looking*, a violation of the Structural Preservation Principle.

Likewise, the preposition *for* and the particle *after* in a WH-transformation result equally in grammatically questionable sentences:

36) ? For what new book was Anton looking?
37) *After which patent is Gonzalez looking?

Thus, the explanatory adequacy of the Structure Preservation Principle is challenged by empirical evidence, although its general theoretical premise is still logical in that Phrase Structure Grammar still mostly adheres to the use of intact phrasal categories in transformations. For applied linguists and language teachers, it is a matter of seeking alternative explanations somewhere between the principles of Universal Grammar and pedagogical grammar in both investigating the structure of English and teaching it in a persuasive way to an inquisitive learning audience.

6 The Projection Principle

One central tenet of the Projection Principle is the result of the investigation of the properties of lexical items with the development of the X-bar theory and less common use of the Phrase Structure Grammar, whose limitations have previously been discussed (Speas, 1990). The lexicon of a language carries with it certain thematic roles such agent, patient, experiencer, goal, etc. which are necessarily organically connected to the types of syntactic structures that may result. Jakendoff (1987) argues that these thematic roles are definable in a lexical conceptual structure that links itself to a syntactic structure. In other words, the kinds of sentences that we generate are not only constrained by syntactic principles, such as the Subjacency and the Structure Preservation Principles, but also by semantic properties of the lexicon (Bowers, 2018), or the lexical items have their own selectional restrictions (Cruze, 2011) and, therefore, project syntactic outcomes based on these restrictions.

The key concept here is the Lexical Conceptual Structure (LCS), initially proposed by Hale and Keyser (1987) and further elaborated by the same authors in 2002 on what they call “the syntax of the lexical items”. The idea itself is not complex: lexical items “act” to define the argument structure of a lexical item such as the transitive verb *cut*:

38) Cut: ***x*** produces linear separation in material integrity of ***y*** by sharp edge coming into contact with the latter.

The lexical item *cut*, therefore, requires two arguments: the subject NP and the object NP, as in

39) Paul cut the bread in the kitchen.

where *Paul* is assigned the thematic role of agent, whereas *the bread* serves the thematic role of patient. The preposition phrase *in the kitchen* is optional, known as an adjunct.

With a different verb *put*, a different argument structure emerges:

40) Put: ***x*** causes ***y*** to come to be at ***z***.

The lexical item *put*, which is still a transitive verb, *requires* three arguments: the subject NP, the object NP, and a locative PP, as in

41) Paul put the bread in the kitchen.

where the obligatoriness of the locative argument is determined by the syntactic behavior of the verb *put*, which requires a locative, formally known as a complement.

The syntactic difference between *cut* and *put* is a direct result of two different Lexical Conceptual Structures. However, the syntactic representations of the two sentences at the S-structure level remain identical:

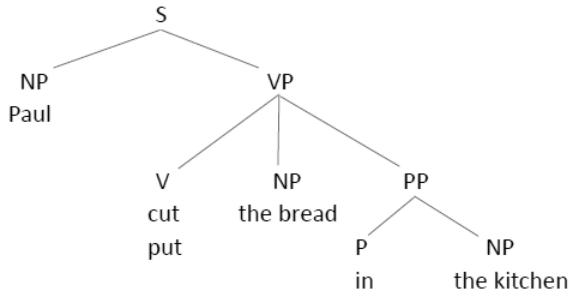

Figure 3. Syntactic representations of examples 39) and 41)

The adjunct vs. complement relation is often described as a difference between the two "in the manner by which the logical predicate–argument relation underlying the syntax is mapped onto a syntactic head-dependent relation" (Ninio, 2019, 36), citing the object of a transitive verb as a predicative complement, as in "took the picture", and the adjectival modifier of a head noun as an adjunct, as in "big dog". Such definition, however, overlooks the adjunct vs. complement relation between "in the kitchen" in the exactly the same syntactic position in 2) and 4), the kind of adverbial adjuncts which Ernst (2007) acknowledges as lacking syntactic principles.

Such a conceptual structure based on the properties of the lexicon is not without other caveats in real life. If syntactic projections rely on lexical properties, these properties are not always stable in language use in specific communicative and pragmatic contexts. Lexical categories and subcategories do change, not through codification by lexicographers, prescriptive grammarians, and teachers, but through diachronic and synchronic language change and variation – linguistic phenomena which sociolinguists try to observe, describe, and explain in different social contexts across time and geographical and social boundaries (Wardhaugh, 2021). Universal principles may serve as an inspirational framework of reference, but language learners (both children and adults) frequently improvise in communicative interactions in violation, even if minor, of these principles.

A look at the verb *disappear*, for example, may reveal its evolution from an intransitive verb whose argument structure does not require a verb complement, as in

42) Lukas disappeared into the darkness.

In contemporary usage, however, the verb can be used transitively as in

43) Lukas disappeared his cat.

Modern dictionaries have reluctantly but ultimately accepted the verb to reflect its real-life use by speakers of English in ominous circumstances such as kidnapping and murder, and more benign figures of speech like 43). The Oxford English Dictionary attributes its newly acquired use to Latin America. American Heritage and Merriam-Webster dictionaries have also included the word without further comment on its transitive use. Naturally, lexical properties change, by social force (e.g., the social media) or by improvisation and idiosyncrasy, such as

44) "The fly went its legs across its wings"
(William Golding's *Lord of the Flies*)

where *go* is retrofitted by the author as a transitive verb quite vividly and creatively – a usage yet to be found elsewhere in both spoken and written discourse.

The Projection Principle also presents other challenges, perhaps somewhat unexpectedly, when one contemplates how the LCS dissects the following sentences:

45) After retirement, Prof. Smith lived in Brasov for five years.
46) After retirement, Prof. Smith lived in Brasov.
47) After retirement, Prof. Smith lived for five years.

46) and 47) are derived from 45) by omission of presumably two adjunct prepositions "for five years" and "in Brasov" respectively. They are adjuncts because neither is syntactically obligatory for grammaticality. Yet, omitting a temporal adjunct results in a dramatic change in meaning, whereas omitting a spatial one does not. In other words, thematic roles are not functioning in concert with the LCS, a limitation of the Projection Principle. It will be up to pedagogical grammarians to explain the semantic consequences of adjunct omission to language learners.

There are other ambient and nonambient questions about the explanatory adequacy of the Projection Principle, such as

48) The student of chemistry with long hair.
49) The student of chemistry.
50) The student with long hair
51) *The student with long hair of chemistry

Clearly, the ill-formedness of 51) is not due to semantics but syntax. There apparently is a syntactic hierarchy in which prepositional complements always precede prepositional adjuncts. Lexical properties of the prepositions determine where they are positioned as adjectival modifiers. Applied linguists, many of whom are not adequately trained in theoretical linguistics, such as various principles of Universal Grammar, often resort to a more commonsensical approach to distinguishing "with" and "of" in relation to the NP they modify from a different intellectual perspective, such as the semantic features of prepositions and even language corpus. Language teachers may not be as interested in such analysis as applied linguists since teachers are much less concerned with language errors learners rarely or never make, such as 51), unlike "what did who buy?" (13), a violation of the Subjacency Principle which may be uttered by native speakers as an echo question in pragmatic discourse or by non-native speakers as a result of inductive reasoning (What did Maria buy?).

One final caveat, which is rarely if ever addressed by LCS, is the pragmatically driven determination of lexical properties, as, for example, in the context of a brother asking his sister if she has seen his book:

52) Bill: Where is my book?
53) Mary: Sorry, I'm reading it.

There are two possible interpretations in Mary's answer: a) Here's the book in my hand, and I'm reading it now; b) I'm in possession of the book in order to read it (but not physically reading it now).

The issue of interpretation for 53) here lies not in formal lexical properties of the transitive verb *read* which subcategorizes for two arguments: the subject NP and object complement; it lies in the interpretation of the aspectual meaning of the present progressive form which Klammer et al. (2013) call MVP (Main Verb Phrase): BE + {-ing} + Read) in pragmatic contexts. Larsen-Freeman and Celce-Murcia (2015) specifically address this kind of grammatical phenomenon because it is pedagogically relevant to language teachers, that is, how one grammatical form generates two drastically different intended meanings. The Projection Principle can accurately describe the correct argument structure, but it does not take into account the variation in meaning intended by the interlocutor in face-to-face interactions, which is exactly what applied linguists, and by extension, language teachers are concerned with.

7 The Empty Category Principle

The Empty Category Principle (ECP) is part of Chomsky's Government and Binding (GB) theory (Chomsky, 1981) in the Universal Grammar framework that explains the relationship between the movement of a syntactic constituent and the trace it leaves behind, such as WH-fronting in a WH-interrogative formation. Movement of any syntactic constituent is necessarily constrained by the Subjacency Principle as previously shown, and theoretically, if a constituent is moved out of its original position, it leaves a trace in that position, which is thus an empty category. And this trace *t* for short, in the jargon of the GB theory, must be "governed" in its "governing category". A simple example illustrates the trace:

54) Matt kissed Lydia.
55) Matt kissed who.
56) Who did Matt kiss *t*?

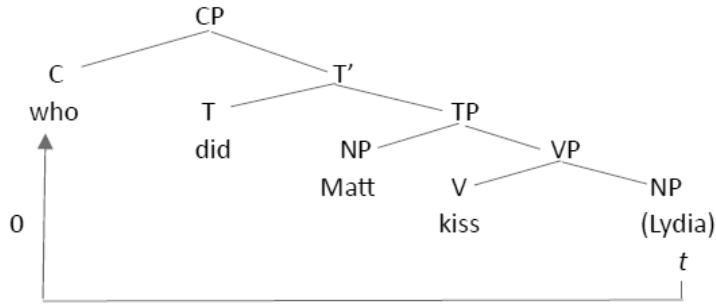

Figure 4. Representation of example (56

where *t* must be within the TP – its governing category (Lasnik, 1988). Since this type of WH-question transformation is naturally acquired by children learning English as their mother tongue, and commonly taught to adults learning English as second language, there is much congruence between theoretical syntacticians and applied linguists at least on descriptive adequacy. Applied linguists may not be enthusiastic about discussing the ECP as a way to explain the grammaticality of a WH-interrogative transformation like 56), but they would accept one central tenet of Transformational-Generative Grammar in regard to WH-word movement not only in question formation but also in relative clause constructions:

57) Matt talked to the man who he met *t* at the meeting.

where in 57), the relative pronoun *who* has moved to the front of the clause leaving a trace *t* in verb complement position. In language teaching, teachers well-versed in this school of grammar can easily explain to learners how to correctly form a WH-question and how to embed a relative clause in its matrix clause to generate a complex sentence without the knowledge of the GB theory. And perhaps not so intriguingly, the trace theory as part of the ECP will need to accommodate the so-called resumptive pronoun phenomenon, common in a variety of the world's languages (see Rouveret, 2011) and some indigenized varieties of English outside the dominant British and American English, an example of which is shown below. However, the use of resumptive pronouns more often occurs in prolonged sentences as a recall device to overcome processing constraints on referring back to the original referential NP (Sichel, 2014):

58) Matt talked to the man who he met *him* at the meeting.

There is currently no available evidence in applied linguistics research as to whether adult language learners would produce such constructions as a result of either the constraints of the ECP or the influence of their first language that uses resumptive pronouns.

Where applied linguistics diverges from theoretical linguistics in the UG tradition is that the former deploys descriptive frameworks that are accessible to language learners. For example, when analyzing a sentence like the following

59) Lucinda wanted to visit New York,

a pedagogical grammarian or a language teacher would not think about the role of the EPC that a syntactician would:

60) Lucinda wanted *PRO* to visit New York.

The EPC's explanatory power lies in the observation that *PRO* is not only the complement of the verb *wanted* and the subject of the second (non-finite) VP *to visit New York*, but it is also an empty category that can actually be filled with an NP referring to someone else, as in

61) Lucinda wanted *Thomas* to visit New York.

In this sense, the ECP appears to better capture the psychological representation of what an ideal native speaker "knows", i.e., in one's mental grammar of the language where there is indeed an empty category PRO that can readily be filled when needed, even if this knowledge is implicit. Applied linguists, on the other hand, focus more on describing S-level language phenomena that learners can see. For teachers who follow pedagogical or descriptive grammar, 60) and 61) are structurally similar but two separate sentences, while UG principles see them as one underlying D-structure representation of the mind. It may be explanatorily more adequate than the analytical approaches of applied linguistics but less useful in the language classroom.

The ECP may also be manifested in a way that intrigues both theoretical and applied linguists, that is, the phenomenon of competing references:

62) Which horse do you want *t-1* to win *t-2*?

This is an example of one D-structure level base generating two competing S-level sentences:

63) You want *which horse* to win?
64) You want *PRO* to win *which horse*?

The ECP will need to allow for both interpretations in its syntactic representation to show native speaker knowledge of semantic ambiguity only to be disambiguated through pragmatic cues. Likewise, the argument structure of each of the following two sentences

65) Alexis told Vera to go (Alexis told Vera that Vera should go)
66) Alexis promised Vera to go (Alexis promised Vera that Alexis will go)

must be adequately accounted for in the ECP: the complement (object) of *told* is *Vera* whereas the complement (object) of *promised* is *to go*.

There hence is a debatable question for theoretical and applied linguists: how do learners, children or adults, "figure out" the argument structure under the ECP? If UG is fully operative in children as postulated by White (2012), then the lexical properties of verbs are innately available for them to acquire and any principle of UG is learnable without being taught; for adults learning English as a second language with a fully developed cognitive system, the lexical properties are teachable. Therefore, learnability is innately driven but learning is constrained by the UG principles, and teachability is cognitively driven as teaching involves explicit explanation that appeals to an adult's cognitive and metacognitive systems. In other words, applied linguistics does something that theoretical linguistics does not do: focus on the language learner in communicative contexts instead of focusing on the language itself.

8 The Pro-drop Parameter

In principles and parameters of Universal Grammar, the latter represent a binary structural system that captures languages in which a subject or subject pronoun is either obligatory or optionally dropped without affecting the comprehensibility of a sentence. Spanish is typically characterized as a pro-drop parameter, whereas English is a non-pro-drop language. There is no shortage of published research in this field, but perhaps the most comprehensive treatment of the Pro-drop Parameter in the early years is the book edited by Jaeggli and Safir (1989). It studied some of the world's pro-drop languages such as Italian, Arabic, Portuguese, and Chamorro. A variety of syntactic and morphological reasons has been proposed as to how and why some languages may drop their subjects and some may not. English, for example, is classified as a non-pro-drop language because its meager inflectional morphology on the

verb cannot provide enough clues about the subject if it were dropped. Spanish often drops sentential subject pronouns due to its "rich" verbal inflections. A later book by Camacho (2013) revolves around none other than the Projection Principle by which he argues that the lexical properties of a transitive verb like *eat* require two theta roles, hence two syntactic arguments, the subject and the object, and the omission of the subject pronoun in Spanish and Chinese does not negate the validity of the UG principle itself. For the pro-drop language Mandarin, which has zero inflectional morphemes, Huang (1984) proposed a pragmatic solution: highly interactive contexts are sufficient to ensure the successful mental retrieval of the subject pronoun in conversation, although he did not address formal written language, lacking such contexts.

Hence, in English, a non-drop language, a subjectless sentence is deemed ungrammatical:

67) Daniel: Hey, did your mom arrive last night?
68) Juan: Yes, she did/arrived.
69) Juan: *Yes, ___ did/arrived.

In Mandarin, by contrast, the same dialog translated from 69) is perfectly grammatical:

70) Juan: shide, ____ daole

In language acquisition research regarding the pro-drop parameter, there is debate on whether there is a default setting for the pro-drop parameter and how the parameter is initially set and reset in the learning process (Callies, 2013, White, 2012). Bloom (2018) argues that all learners start with the +pro-drop setting regardless of language, and will reset that setting to -pro-drop when faced with linguistic evidence from a language like English, or need not reset the parameter if they start with a +pro-drop language like Spanish. While the parameter-setting model of first and second language acquisition explores the linguistic dimensions under the UG framework, researchers in search of an optimal learning theory often overlook the less predictable aspect of social effects on the shape and form of language use frequently witnessed in real-life scenarios, such as sticky notes, quick e-mails, text messages, social media outlets, and even university catalogs:

71) *Hope* everything is going well.
72) *Looks* like it gonna rain.
73) *Gone* to lunch; will be back at 2:00.

74) *Traveling* to London next week. Will be back on Monday.
75) Just *came* back from San Franscisco. *Will* go to Amsterdam tomorrow.
76) This course prepares teacher candidates for elementary school teaching. *Emphasizes* the application of pedagogical content knowledge and assessment to inform instruction.

One might argue that these pro-drop examples in English reflect spoken and informal written language which may not have been this way 20 or 30 years ago. Applied linguistics, especially applied sociolinguistics, takes an interest in exploring how language is transformed socially, historically, and pragmatically instead of approaching the study of language under a narrow set of UG principles and parameters. It does not mean that applied linguistics is unconcerned with the systematicity of the rules of language. On the contrary, the field examines authentic language and looks for patterns of use that could inform language teachers and learners.

9 Head-directionality

Head-directionality is a parameter in the UG framework at two different levels: phrasal and clausal, although most of the latter is the focus of researchers. Polinsky (2012) examined the word-order headedness of 28 languages around the world, while Arantzazu (2014) studied a specific language, i.e. Basque, with a mixed headedness concerning object-verb alignment in clauses and sentences.

At the phrasal level, the special topic of interest relevant to applied linguistics is the head-directionality of head vs. modifiers. In English, an adjectival modifier (e.g., determiner, adjective, noun, quantifier), precedes the noun it modifies. That is, the relationship is one of prenominal modification, as in

77) Good book
78) A Chicago trip
79) Several tourists

Such a syntactic arrangement requires that attributive modifiers precede the noun, and vice versa results in ungrammaticality:

80) *Books good
81) *A trip Chicago
82) *Tourists several