

# A feature theory for lexical and functional categories

## *Functional Categories and beyond*

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### *The elusive functional-lexical distinction.*

Nobody really has a *good* theory on the lexical-functional distinction.

Confusion is caused by

- Theta-assignment, e.g. Haegeman (2006)
- Descriptive content (but remember semi-lexical categories!)
- Abney's (1987, 64–65) oft-quoted criteria
- The open class-closed class distinction and the ensuing confusion with adjectives and Extended Projections (Cinque 2006, 4–6).

Functional categories are certainly peculiar beasts.

Muysken (2008) surveys their

- theoretical status and behavior,
- diachronic processes such as grammaticalization,
- acquisition,
- processing.

His conclusion is that there exist no unambiguous criteria for functional category membership:

“indeed there is an overall correspondence between the functional status of an element and its form, but that this correspondence cannot be captured by structural principles” (2008, 41).

“[V]ery few semantic features, if any, unambiguously characterise a class of elements that may be reasonably termed functional categories” (ibid.: 52).

The lexical-functional distinction is ultimately one that must be made theory-internally – as with most of the important analytical distinctions in scientific enquiry.

## **Functional heads as lexical satellites supplying structural positions.**

What is the interpretation of categorial features on functional heads?

Easy question:

- [T] feature, anchoring in time;
- [C] would most likely encode illocutionary force;
- [D] would encode referentiality and, possibly, also deixis

Or a not so easy question:

- Focus, Topic, Mood, Aspect, Voice, and Quantifier, Number, Classifier...
- We can come up with features, but will they be *categorial* features? The case of split / unitary Complementisers (cf. Rizzi 1997; Preminger 2010; vs. Newmeyer 2004): would Focus, Topic or Force features *together* act as the categorial features a unitary Comp head, wherever available?

Chametzky (2000, 22–32), (2003, 213–19) and Hinzen (2006, 174) essentially take functional elements to be satellites of lexical heads. Already in Grimshaw's (1991) *Extended Projection*, or Chomsky's *Complete Functional Complex* (Chomsky 1986b).

Functional elements are understood to belong to the same *supercategory* (Chomsky 2001, 47) as the lexical categories of which they form the functional entourage:

No matter how many functional categories are hypothesized, motivated and discovered, no actual proliferation of the number of *stricto sensu* parts of speech is necessary.

Functional elements are satellites of lexical ones, and that functional categories *do not exist* as primitives of the grammar.

Functional elements are perhaps just collections of features in the Numeration which are flagged by a feature, as in Hegarty (2005).

Why 'flagged'?

Because of what Felix (1990) calls *biuniqueness*, harking back to at least Martinet.

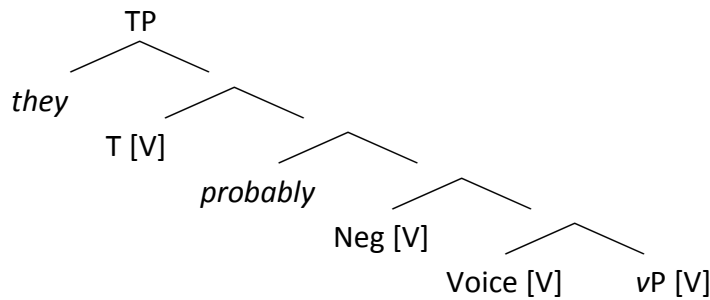
Biuniqueness is the exclusive relationship between nouns and the nominal functional heads (D, Num etc.), and between verbs and the verbal/clausal functional heads (Voice, Asp, T, Mood etc.).

How to capture this?

Ouhalla (1991), Grimshaw (1991) van Riemsdijk (1998): Functional categories bear the categorial specification of the lexical head in their projection line.

Consider:

*They will probably not finish it.*



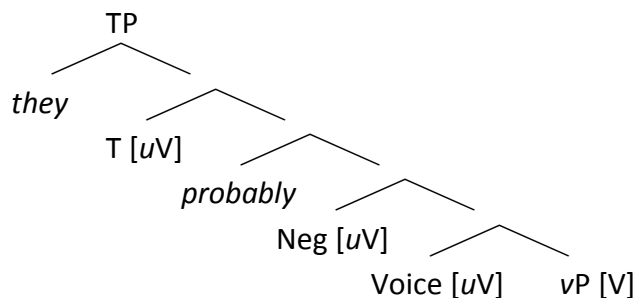
In the spine above there are simply too many [V] features:

What is the interpretation of each of them? And at the end of the day, the features meant to distinguish nouns from verbs cannot distinguish verbs from Tense or, worse, Voice.

And beware of features like [func]!

### ***A solution: uninterpretable categorial features***

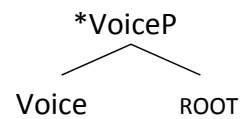
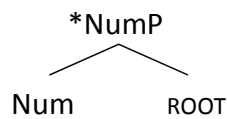
**Categorial Deficiency:** functional elements bear the uninterpretable version of the categorial feature of the lexical head at the bottom of their projection line (cf. Panagiotidis 2002, chap. 5)



Why?

- Verbal/clausal functional heads will all be marked as [*u*V], nominal ones as [*u*N]; they will be distinguished from each other by virtue of their interpretable features, such as [voice], [tense], [aspect], [(illocutionary) force] and the like.
- Functional heads are just members of a verbal/clausal and a nominal supercategory (Chomsky 2001, 47; Chametzky 2000, 22–32, 2003, 213–19; Hinzen 2006, 174; already in Grimshaw 1991, 2003).

- Functional ‘categories’ are not grammatical primitives but the UG features they host *are*; e.g. number / individuation features *are* grammatical primitives; Num is *not* (such features could be borne by e.g. a classifier head).
- The lexical-functional distinction is real and sharp, and that there is no such thing as a lexical-functional gradient:
- In L1 acquisition functional categories tend to be acquired later: Radford (1990), (1996), Guilfoyle and Noonan (1992), Vainikka (1994). Selectively impaired in Specific Language Impairment or in cases of trauma: Muysken (2008, chaps. 8–11) for a survey.



Recall: functional heads *cannot* categorise roots or anything else!

## Categorial Agree.

### Definitions

**Agree** (after Baker 2008, 48)

The ‘Probe’ agrees with the ‘Goal’) iff:

- The Probe c-commands the Goal – *the c-command condition* (Chomsky 2000, 122);
- There is no X such that the Probe c-commands X, X c-commands the Goal, and X has  $\varphi$ -features – *the intervention condition* (Chomsky 2000, 122);
- The Goal has not been rendered inactive by the Phase Impenetrability Condition – *the phase condition*; (Chomsky 2000, 108).

**Probes project** (Chomsky 2000, 133–34, 2004, 109; Hegarty 2005, 32; Donati 2006)

The Probe is always a head: a lexical item (LI) rather than a syntactic object (SO); the Probe (F) projects.

Thus, after the application of Merge:

The Probe, a head, projects.

**Probes and Goals as features** (Panagiotidis 2015, 126)

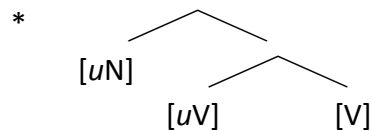
If [X] is an interpretable categorial feature, [ $uX$ ] serves as Probe for the Goal [X], and not vice versa: [X] cannot ever act as a Probe for [ $uX$ ] and [ $uX$ ] can never act as a Goal.

In the light of the above, Categorical Deficiency buys us six essential characteristics of spines, which were hitherto partially explained, unexplained or stipulated:

### Biuniqueness

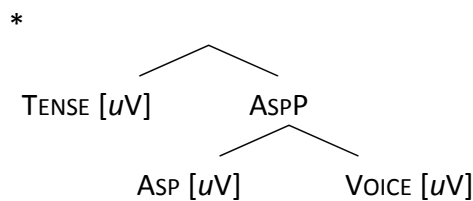
Biuniqueness reduces to the Probe-Goal matching requirement of (categorial) Agree: functional heads marked for [ $uV$ ] will only appear in the Extended Projection of  $V$  (i.e. of  $v$ ), which itself bears an interpretable [ $V$ ] feature; functional heads marked for [ $uN$ ] in that of  $N$  (i.e. of  $n$ ), which itself bears an interpretable [ $N$ ] feature.

Hence, a derivation like the one below would crash due to *feature mismatch*.



### The necessity of lexical heads (i.e. categorisers) in a derivation

If [ $uX$ ] cannot act as a Goal, then there is no Goal for the [ $uV$ ] probes to agree with in a situation below, where there are no lexical heads, hence no interpretable categorial features to act as Goal.

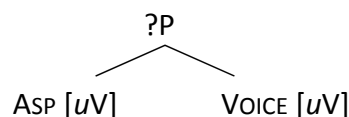


### We cannot merge lexical after we have started merging functional

We cannot salvage the tree above by just merging a  $v$  in order to supply a Goal ( $v$  has an interpretable [ $V$ ] feature): The Probe  $c$ -commands the Goal. Thus, we can derive that the lexical head appears always at the bottom of the spine!

### Deciding the label

The tree above would not be possible to begin existing. Backtrack and go to the first step of Merge:



We saw that the Probe, a head, projects. In the scenario above both [ $uV$ ] features can in principle be Probes for categorial Agree. Therefore both Asp and Voice would be possible to project. This in turn would result to

- i. optional labelling for the resulting constituent or
- ii. an intrinsic failure *of the system* to determine the head or
- iii. co-projection of both Asp and Voice.

I take it with Chomsky (1995, 244) that the last two options are impossible and I would think that the first one, that of optional labelling, is highly undesirable, too. See also Hinzen (2006, 187–89).

We derive that we cannot begin a tree by merging two functional heads.

### When a functional [ $uX$ ] LI and a lexical [ $X$ ] LI merge, the functional LI, a Probe for categorial Agree, invariably projects

Because Probes project. That's it.

### When a functional [ $uX$ ] LI and an SO merge, the functional LI, a probe for categorial Agree, cannot be a specifier.

	Predicted result	Example
$[uX]$ LI merges with $[uX]$ LI	*	*[ Asp Voice]
$[uX]$ LI merges with $[X]$ LI	$[uX]$ LI projects	[ <sub>DP</sub> D <i>n</i> ]
$[uX]$ LI merges with SO (always [ $X$ ])	$[uX]$ LI projects	[ <sub>DP</sub> D NumP]
$[uX]$ LI merges with root	*	*[Num cat]
$[X]$ LI merges with $[X]$ LI	?	?
$[X]$ LI merges with SO (always [ $X$ ])	?	[ <sub>VP</sub> V <i>nP</i> ]
$[X]$ LI merges with root	?	[ <sub>nP</sub> <i>n</i> cat]
SO merges with SO (both always [ $X$ ])	?	[ <sub>TP</sub> [ <sub>DP</sub> the cat] [ <sub>TP</sub> meows]]

The above five points derive that whenever functional and lexical material merges, the result will be a projection line, *a spine*, with the lexical material at the bottom.

Therefore, we do not have to stipulate spines.

### Mixed projections.

Mixed Projections are everywhere. Think of gerunds and nominalized infinitives.

Biuniqueness is flouted in mixed projections: they combine nominal *and* verbal/clausal elements.

Two examples:

#### English Poss-*ing* gerunds

[Godzilla's destroying the city] made it to the evening news.

We have Genitive assignment to *Godzilla's*, a nominal characteristic: the signature of a *Determiner*

We also have Accusative assignment to *the city*, a verbal characteristic, the signature of *Voice*.

Finally, English *-ing* only attaches to verbal stems.

### Dutch ‘expressive’ nominalised infinitives (Schoorlemmer 2001, 2002)

Deze zanger is vervolgd voor [dat stiekem succesvolle  
liedjes jatten]

This singer is prosecuted for [that sneakily successful  
songs pinch.INF]

We have demonstrative *dat*, a nominal characteristic: a Determiner.

We also have the adverb *stiekem*, a verbal characteristic.

We also have Accusative assignment to *successvolle liedjes*, a verbal characteristic, the signature of *Voice*.

Finally, an infinitive, *jatten*, is a verb from.

N.B.: Mixed projections are different from lexical category changing! Compare English Poss-*ing* gerunds, a mixed projection, with ‘mixed nominalisations’, a deverbal noun (Harley and Noyer 1998; Pires 2006; Moulton 2004):

The/John’s destruction of the city (by John)	<i>derived nominal</i>
The/John’s destroying of the city	<i>mixed nominalisation</i>
John’s/*the destroying the city	<i>Poss-<i>ing</i> gerund</i>
*The/John’s having examination of the student (by John)	<i>derived nominal</i>
*The/John’s having examining of the student	<i>mixed nominalisation</i>
John’s having examined the student	<i>Poss-<i>ing</i> gerund</i>
The/John’s careless destruction of the city	<i>derived nominal</i>
The/John’s careless destroying of the city	<i>mixed nominalisation</i>
John’s/*the carelessly destroying the city	<i>Poss-<i>ing</i> gerund</i>

### Approaching mixed projections

In grammatical theory there are generally three ways to approach them:

1. To write categorial duality into their head: Jackendoff (1977), Pullum (1991), Lapointe (1993), Bresnan (1997);
2. To argue for a structure where an abstract nominal element selects a verbal/clausal constituent: Baker (1985), Abney (1987) and Yoon (1996).
3. To claim biuniqueness is an illusion: nominal and verbal/clausal functional heads can freely mix in a spine (Alexiadou 2001).

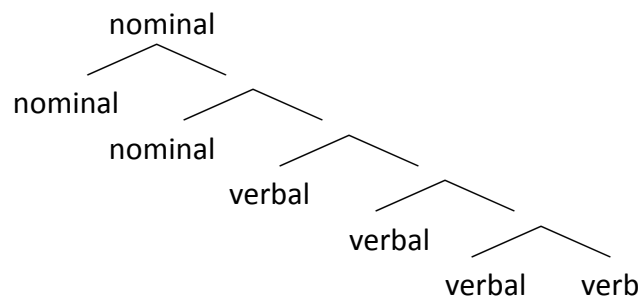
We will follow *the first two*, reconciling them.

Why not go free mixing? Why not *freely* mix together any kind of functional heads, e.g. D with Asp, T with Num, D with Voice, T with D?

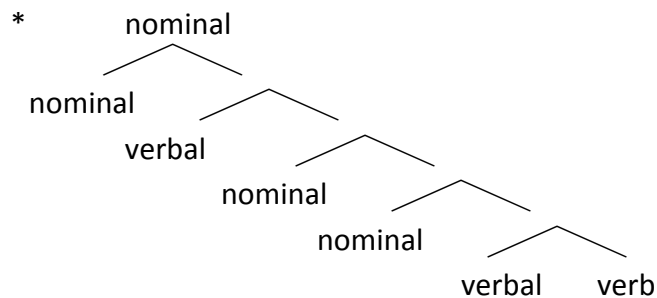
Because of the following two generalisations:

**Phrasal Coherence:** the mixed projection “can be partitioned into two categorially uniform subtrees such that one is embedded as a constituent of the other” (Bresnan 1997, 4; Borsley and Kornfilt 2000; after Malouf 2000).

A mixed projection abiding by Phrasal Coherence



A mixed projection *not* abiding by Phrasal Coherence



**Nominal external behaviour:** mixed projections externally behave as *nominal* constituents (Panagiotidis 2015, 139; after Malouf 2000; Borsley and Kornfilt 2000; Hudson 2003)

Okay, but

- How are mixed projection even possible?
- (How) is biuniqueness flouted?



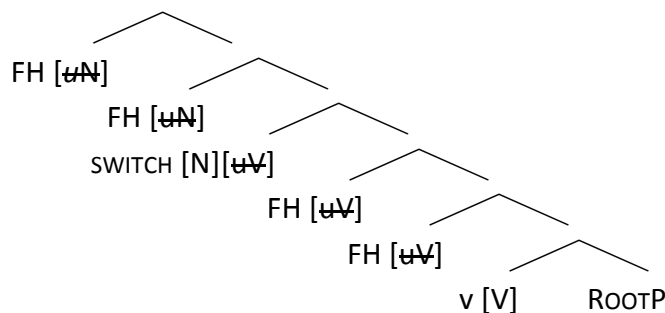
## Functional categorisers, aka Switches

It is *not* flouted: **Switches**, i.e. functional categorisers, mediate between the two categorially distinct functional subtrees (Lapointe 1999).

As categorizers, they bear [N]. As ‘functional’, they bear [ $uV$ ].

Questions:

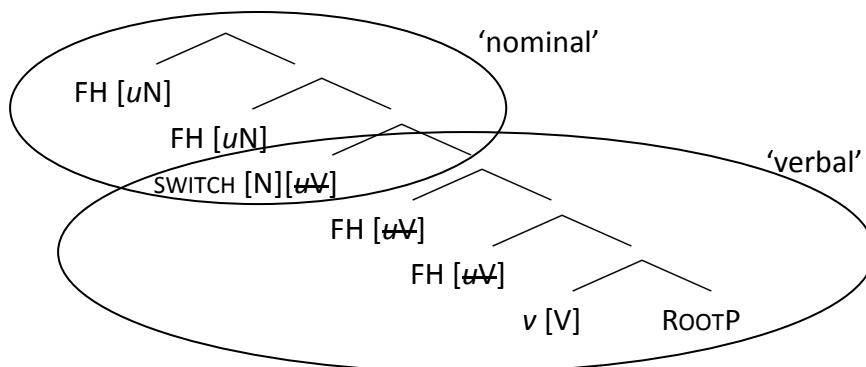
1. Is it possible for two categorial features to co-exist on a single head?  
Yes, if only one is interpretable.
2. How come this co-existence does not induce a categorial clash?  
See above.
3. What does it mean (LF-wise) for a syntactic head to be specified as [N] [ $uV$ ]?  
See below:



We have morphologically overt switches in Basque (*-te / -tze*), Turkish (‘factive nominalisers’ *dik* and *AcAk*), Korean (*-um*).

So, mixed projections are actually business as usual, spines of the usual sort, with a category-changing functional item.

Their existence is a consequence of LF-(un)interpretable categorial features and – of course – the local nature of (categorial) Agree.



### **The subtrees making up mixed projections.**

It seems that the *verbal/clausal structure* of mixed projections comes in one of *four types* (Alexiadou, Iordăchioaia, and Schäfer 2011; Panagiotidis 2015, 165):

- *Voice Phrases*, as in (small) Spanish nominalized infinitives;
- *Aspect Phrases*, as in English Poss-*ing* gerunds, German verbal infinitives, Romanian supines and Dutch ‘plain’ nominalized infinitives;
- *Tense Phrases*, as in (large) Spanish nominalized infinitives, in Dutch ‘expressive’ nominalized infinitives, and in Korean and Japanese verbal nouns;
- *Complementizer Phrases*, as in Greek and Polish D+CP, and Turkish nominalized clauses.

These turn out to be revealing with respect to an old favourite assumption: the CP-DP parallelism.

### **Do clauses and nominal phrases share the same architecture?**

The so-called CP-DP parallelism can be broken down in two hypotheses:

#### **Hypothesis 1**

**The C-D hypothesis:** Determiners are to nouns what complementisers are to verbs (Brame 1981; Szabolcsi 1984; Fukui and Speas 1986; Horrocks and Stavrou 1987).

or

**The I-D hypothesis:** Determiners are to nouns what Inflection is to verbs (Abney 1987; Grimshaw 1991, 2003; Wiltschko 2014, chap. 6).

A point easily and often missed: The above hypotheses must be distinguished from the following claim, which is orthogonal to which of the above holds:

**The clausal-nominal parallelism:** the clause and the nominal phrase have identical architecture, e.g. they are divided in corresponding domains (Horrocks and Stavrou 1987; Grimshaw 1991, 2003; Grohmann and Haegeman 2003; Wiltschko 2014, chap. 2).

What is the consensus on this parallelism?

#### 1. *Phase Theory: no parallelisms*

CP is typically understood to be biphasal: CP-vP whereas DP *maybe* is monophasal (Svenonius 2004), if at all; perhaps it is *sometimes* a phase (Hicks 2009). This echoes an insight in Wunderlich (1996):

“Syntactic accounts (such as that by Chomsky 1986a) claiming that nouns have only one dominating category, namely D (determiner), while verbs have two, namely I (inflection) and C (complementizer), meet an important point. Although more elaborate accounts may identify several functional categories for verbs, such as aspect, tense, mood and status, these categories may be grouped as performing two main functions.” (Wunderlich 1996, 18–19, footnote omitted)

### 2. Grohmann’s (2003) Prolific Domains: full parallelism

Both CP and DP are divided into three Prolific Domains: an  $\Omega$ -domain, a  $\Phi$ -domain and a  $\Theta$ -domain.

The D field is the nominal  $\Omega$ -domain (parallel to C),

the Num field is the nominal  $\Phi$ -domain (parallel to Tense).

### 3. Wiltschko (2014) Universal Spine Hypothesis: full parallelism

Four functional domains for both CP and DP (after Wiltschko 2014, 78):

	Clause	Nominal Phrase
<i>Linking</i>	CP	KP
<i>Anchoring</i>	IP	DP
<i>Point-of-view</i>	AspP	PhiP (e.g. NumP)
<i>Classification</i>	vP	nP

## Empirical problems with the clausal-nominal parallelism:

Empirical problems, from Bruening (2009):

### First problem

Complement selection is for CPs but not for DPs (point made already in Payne 1993).

Observe the unattested patterns below:

(1) John glorped books.

\*John glorped his books

(2) Samuel is streading a book.

\*Samuel is streading the book.

These are contrasted with, say, the selectional requirements of *gather* for Number:

(3) I gathered the / some students.

\*I gathered a student.

\*I gathered the scissors.

### Second problem

C determines Infl (a relation formalised in Phase Theory):

(4) I would like [for the Jamaicans to win].

I expect [that the Jamaicans will win].

Each auxiliary determines the form of the next:

- (5) I might have been being handed some cocaine (when the police caught me).

V *never* determines the form of the functional elements inside its projection line. N and Num often do:

- (6) \*this / these scissors

Generally, concord is for gender (on N), for number (on Num) and – curiously – for (morphological) case. Concord is never for person, quantification, deixis, definiteness, referentiality, all assumed to be associated with Det.

Bruening's (2009) conclusion (already in Payne 1993; Radford 1993):

C is the head of the clausal projection but D is not the head of the nominal projection.

### ***Can we salvage the CP-DP parallelism? Almost.***

According to Larson's (1999, 2009, 2014) and Larson & Yamakido's (2006, 2008) *relational view* of Determiners, we don't have to: Determiners are Generalised Quantifiers (Barwise and Cooper 1981; Keenan 1996). They are more like verbs in that they take nominal arguments *and* assign NP-internal Case (Babby 1988; Larson and Yamakido 2006) – there is also a *d*-D shell, reminiscent of the *v*-V Larsonian shell.

However.

There is significant terminological confusion here. Under the *syntactic* label 'Determiner', we bundle together up to *three* different things:

- a. Semantic Determiners, i.e. Generalised Quantifiers: *all, some, many, most, every, 'true' the, a* etc.
- b. Articles, as the domain of definiteness and specificity or not (cf. Zamparelli 2000).
- c. The domain of high possession, deixis and Case (Travis and Lamontagne 1992; Bittner and Hale 1996).

Moreover:

- i. Not all semantic Determiners (i.e. Generalised Quantifiers) are Determiners syntactically: numerals are *not* Determiners (e.g. Borer 2005).
- ii. The above tripartition is valid *besides* the possible existence of nominal Focus and nominal Topic projections (Aboh 2004; Grohmann and Haegeman 2003).

The above considerations are hardly new: divorcing *true* Determiners from articles has already been proposed (Szabolcsi 1994; Giusti 2002), a number of people have been using a category Q for some quantifiers (cf. Matthewson 2001 and others), whereas Zamparelli (2000) and Ihsane (2008) argue for a Determiner field, akin to Split Infl (Pollock 1989) and the Complementiser field (Rizzi 1997).

The question is whether these solutions fit into a common architecture for CPs and nominal phrases. At first glance, Wiltschko's system looks promising: in the spirit of Szabolcsi (1994) and Giusti (2002) one could separate the three functions of Determiners as follows:

- I. The domain of high possession, 'deictic determiners' (Panagiotidis 2000; Wiltschko 2014, 218–30) and Kase, which deal with the external relations of the nominal phrase, naturally fall under Linking. Wiltschko (2014, chap. 6) makes this point and elaborates on it.
- II. Semantic Determiners, i.e. Generalised Quantifiers like *all, some, many, most, every, a* etc., would fall under Wiltschko's "DP". Their anchoring function, as extensively argued for in Larson's (1999, 2014) relational view of Determiners, can be easily accommodated, too.
- III. Articles, could be either K or D (Wiltschko 2014, chap. 6 seems to consider them all instances of D). Quantificational articles, i.e. of the  $\exists!$  sort, would be clear cases of D, Romance expletive articles as described in e.g. Longobardi (1994) would fall under K. Movement analyses (e.g. D-to-K) or a more fine-grained field for D (Zamparelli 2000; Ihsane 2008) could complete the picture.

### How can mixed projections help us decide?

If CPs and nominal phrases have identical architecture, e.g. each divided identically in three Prolific Domains or four functional domains, this should show clearly and unambiguously in the case of *Mixed Projections*: some domains would be verbal/clausal, some would be nominal.

Ideally, if the parallelism between CPs and nominal phrases holds, the above combined with Wiltschko's system predict that we should have three *particular types* of mixed projections.

(7)

	Type 1	Type 2	Type 3
<i>Linking</i>	KP	KP	KP
<i>Anchoring</i>	IP	DP	DP
<i>Point-of-view</i>	AspP	AspP	NumP
<i>Classification</i>	vP	vP	vP

Phrasal Coherence: two categorially uniform subtrees, e.g. \*KP-IP-NumP-VP

Nominal external behavior: nominal on top, e.g. \*CP-IP-NumP-NP

According to Wiltschko (2014, 76–77) *Type 2* above is "gerund nominalization" (i.e. a Poss-*ing* gerund: *John's eating herring all the time*) and *Type 3* is "nominalization by derivation" (i.e. a deverbal noun: *John's / The eating of herring*). Recall that there is extensive bibliographical consensus on an account along these lines (e.g. Siegel 1998;

Harley and Noyer 1998; Alexiadou 2001; Moulton 2004; Pires 2006; Alexiadou, Iordăchioaia, and Schäfer 2011; Panagiotidis 2015, chap. 6).

What about our *Type 1* in (7)? Wiltschko doesn't discuss mixed projections of this sort.

A possible candidate for *Type 1* mixed projections is large Spanish nominalized infinitives (Ackema and Neeleman 2004, 178; Alexiadou, Iordăchioaia, and Schäfer 2011):

[El cantar yo La Traviata] traerá        malas consecuencias  
 The sing.INF I La Traviata bring.FUT    bad    consequences  
 'My singing the Traviata will not end well.'

In instances like the above we have nominative subjects. Yoon and Bonet-Farran (1991, 364–65) follow Plann (1981) in claiming that the above are full CPs in the complement of an empty noun synonymous to *hecho* ('fact'). However, such nominalizations don't always have a factive reading (Rosemeyer 2012): we are therefore dealing with *a nominalised TP with a full subject in nominative* (not a default Case, but the result of Case-marking indeed according to Yoon and Bonet-Farran 1991). Note that even if the source of nominative is not T, the clausal constituent is large enough to contain a postverbal subject, hence a TP.

Hence (cf. Panagiotidis 2015, 165),

(8)

	<b>Type 1</b> <i>nominalized infinitives</i>	<b>Type 2</b> <i>English gerunds</i>	<b>Type 3</b> <i>'mixed nominalisations'</i>
<i>Linking</i>	KP	KP	KP
<i>Anchoring</i>	IP	DP	DP
<i>Point-of-view</i>	AspP	AspP	NumP
<i>Classification</i>	vP	vP	vP

### **Misfits: 'Type 0' K+CP mixed projections**

There exists a *fourth* type of nominalisation (call it 'Type 0'), where K (understanding some articles to be K, not D, as above) take a CP complement. Consider examples from Polish and Greek. Polish examples and discussion from Borsley and Kornfilt (2000, 113–14).

(9) *Polish*

[To, że Maria zmienia pracę] Jan oznajmił.  
 that COMP Maria is.changing job Jan announced  
 'Jan announced that Mary is changing her job.'

Jan rządał [(tego),żeby Maria zmieniła pracę].  
 Jan demanded that COMP Maria changed job  
 'Jan demanded that Maria change her job.'

Jan zastanawia się nad [tym, czy kupić nowy samochód].  
 Jan wondered over that if buy new car  
 'Jan wondered whether to buy a new car.'

Jan zastanawia się nad [tym, kiedy kupić nowy samochód].  
 Jan wondered over that when buy new car  
 'Jan wondered when to buy a new car.'

(10) *Greek*

[To oti i Maria alazi dhulia] anakinose o Yanis.  
 the COMP the Maria is.changing job announced the John  
 'John announced that Mary is changing her job.'

[To na fiyis] ine efkolo.  
 the IRREALIS leave.2SG is easy  
 'For you to leave is easy.'

Eksetazis [to an tha fiyi].  
 examine.2SG the if will leave.3SG  
 'You are considering whether s/he will go.'

Epaneksetazo [to pote tha fiyi].  
 re-examine.1SG the when will leave.3SG  
 'I am re-examining when s/he will leave.'

Epaneksetazo [to pion tha kalesis].  
 re-examine.1SG the who will invite.2SG  
 'I am re-examining who you will invite.'

The above are not cases of CP complements of empty nouns (Roussou 1990; Panagiotidis 2015, sec. 6.7). They are genuine cases of mixed projections where a K element takes a *variety* of CP complements.

These constitute a true challenge to the Wiltschko schema of mixed projections *and* to the CP-DP parallelism itself:

*Both C and K belong to the same Linking functional domain – they should not co-occur* (cf. also Ogawa 2001, chap. 4).

## Conclusions

It is not the case that D is to N what C is to V:

- the nominal domain's behaviour depends on N
- the (at least) two clausal domains, the *possible world* and the *event* one, each have their behaviour depending on functional elements.

“Determiners” can be squeezed into a schema where CP and DP structures are in parallel – *pace the problem above*:

- Quantifiers being in the same functional domain as Infl (Tense), the Anchoring domain
- Everything else belonging to the Linking domain, like C.

K-CP mixed projections are evidence against a CP-DP parallelism: both C and K belong to the Linking domain.

## REFERENCES

- Abney, Steven P. 1987. “The English Noun Phrase in Its Sentential Aspect.” PhD thesis, Cambridge, Mass.: MIT.
- Aboh, Enoch. 2004. “Topic and Focus within D.” *Linguistics in the Netherlands* 21 (1): 1–12.
- Ackema, Peter, and Ad Neeleman. 2004. *Beyond Morphology: Interface Conditions on Word Formation*. Oxford Studies in Theoretical Linguistics 6. Oxford; New York: Oxford University Press.
- Alexiadou, Artemis. 2001. *Functional Structure in Nominals: Nominalization and Ergativity*. Amsterdam [etc.]: John Benjamins.
- Alexiadou, Artemis, Gianina Iordăchioaia, and Florian Schäfer. 2011. “Scaling the Variation in Romance and Germanic Nominalizations.” In *The Noun Phrase in Romance and Germanic: Structure, Variation, and Change*, edited by Antonia Petronella Sleeman and Harry Perridon, 25–40. *Linguistik Aktuell/Linguistics Today* 171. Amsterdam ; Philadelphia: John Benjamins Pub. Co.
- Babby, Leonard. 1988. “Noun Phrase Internal Case Agreement in Russian.” In *Agreement in Natural Language: Approaches, Theories, Descriptions*, edited by Michael Barlow and Charles A. Ferguson, 287–304. Stanford, CA: CSLI Publications.
- Baker, Mark C. 1985. “The Mirror Principle and Morphosyntactic Explanation.” *Linguistic Inquiry* 16: 373–415.
- . 2008. *The Syntax of Agreement and Concord*. Cambridge Studies in Linguistics 115. Cambridge ; New York: Cambridge University Press.
- Barwise, Jon, and Robin Cooper. 1981. “Generalized Quantifiers and Natural Language.” *Linguistics and Philosophy* 4 (2): 159–219.
- Bittner, Maria, and Kenneth L. Hale. 1996. “The Structural Determination of Case and Agreement.” *Linguistic Inquiry* 27 (1): 1–68.
- Borer, Hagit. 2005. *In Name Only. Structuring Sense*, volume I. Oxford; New York: Oxford University Press.



- Borsley, Robert, and Jaklin Kornfilt. 2000. "Mixed Extended Projections." In *The Nature and Function of Syntactic Categories.*, edited by Robert Borsley, 101–31. New York: Academic Press.
- Brame, Michael. 1981. "The General Theory of Binding and Fusion." *Linguistic Analysis* 7 (3): 277–325.
- Bresnan, Joan. 1997. "Mixed Categories as Head Sharing Constructions." In *Proceedings of the LFG97 Conference*, edited by Miriam Butt and Tracy Holloway-King, 1–17. Stanford, Calif.: CSLI Publications.
- Bruening, Benjamin. 2009. "Selectional Asymmetries between CP and DP Suggest That the DP Hypothesis Is Wrong." *Proceedings of the 32nd Annual Penn Linguistics Colloquium.*, University of Pennsylvania Working Papers in Linguistics, 15 (1): 26–35.
- Chametzky, Robert. 2000. *Phrase Structure: From GB to Minimalism*. Generative Syntax 4. Malden, Mass: Blackwell.
- . 2003. "Phrase Structure." In *Minimalist Syntax*, edited by Randal Hendrick, 192–225. Oxford; Malden, Mass.: Blackwell.
- Chomsky, Noam. 1986a. *Barriers*. Cambridge, Mass: The MIT Press.
- . 1986b. *Knowledge of Language: Its Nature, Origin, and Use*. Convergence. New York: Praeger.
- . 1995. *The Minimalist Program*. Current Studies in Linguistics 28. Cambridge, Mass: The MIT Press.
- . 2000. "Minimalist Inquiries: The Framework." In *Step by Step. Essays on Minimalist Syntax in Honor of Howard Lasnik*, edited by Roger Martin, David Michaels, and Juan Uriagereka, 89–155. Cambridge, Mass: MIT Press.
- . 2001. "Derivation by Phase." In *Ken Hale: A Life in Language*, edited by Michael Kenstowicz, 1–52. Cambridge, Mass.: MIT Press.
- . 2004. "Beyond Explanatory Adequacy." In *Structures and Beyond*, edited by Adriana Belletti, 104–31. Oxford ; New York: Oxford University Press.
- Cinque, Guglielmo. 2006. *Restructuring and Functional Heads*. The Cartography of Syntactic Structures, v. 4. Oxford; New York: Oxford University Press.
- Donati, Caterina. 2006. "Labels and Merge." In . University of Cyprus, Nicosia.
- Felix, Sascha. 1990. "The Structure of Functional Categories." *Linguistische Berichte* 125: 46–71.
- Fukui, Naoki, and Margaret Speas. 1986. "Specifiers and Projection." *MIT Working Papers in Linguistics* 8: 128–72.
- Giusti, Giuliana. 2002. "The Functional Structure of Noun Phrases: A Bare Phrase Structure Approach." In *Functional Structure in DP and IP*, edited by Guglielmo Cinque, 1:54–90. The Cartography of Syntactic Structures. Oxford; New York: Oxford University Press.
- Grimshaw, Jane B. 1991. "Extended Projection." Unpublished ms. Brandeis University.
- Grimshaw, Jane B. 2003. *Words and Structure*. CSLI Lecture Notes, no. 151. Stanford, Calif: CSLI Publications.
- Grohmann, Kleanthes K. 2003. *Prolific Domains: On the Anti-Locality of Movement Dependencies*. Linguistik Aktuell = Linguistics Today, v. 66. Amsterdam ; Philadelphia: John Benjamins Pub.

- Grohmann, Kleanthes K., and Liliane M. V. Haegeman. 2003. "Resuming Reflexives." Edited by Anne Dahl, Kristine Bentzen, and Peter Svenonius. *Nordlyd* 31 (3): 46–62.
- Guilfoyle, Ethne, and Máire Noonan. 1992. "Functional Categories and Language Acquisition." *Canadian Journal of Linguistics* 37: 241–272.
- Haegeman, Liliane M. V. 2006. *Thinking Syntactically: A Guide to Argumentation and Analysis*. Blackwell Textbooks in Linguistics 20. Malden, MA: Blackwell Pub.
- Harley, Heidi, and Rolf Noyer. 1998. "Mixed Nominalizations, Short Verb Movement and Object Shift in English." In *Proceedings of NELS 28*, edited by Pius N. Tamanji, Heidi Harley, Rolf Noyer, and Kiyomi Kusumoto, 1–15.
- Hegarty, Michael. 2005. *A Feature-Based Syntax of Functional Categories: The Structure, Acquisition, and Specific Impairment of Functional Systems*. Studies in Generative Grammar 79. Berlin ; New York: Mouton de Gruyter.
- Hicks, Glyn. 2009. *The Derivation of Anaphoric Relations*. *Linguistik Aktuell = Linguistics Today*, v. 139. Amsterdam ; Philadelphia: John Benjamins Pub. Co.
- Hinzen, Wolfram. 2006. *Mind Design and Minimal Syntax*. Oxford ; New York: Oxford University Press.
- Horrocks, Geoffrey, and Melita Stavrou. 1987. "Bounding Theory and Greek Syntax: Evidence for Wh-Movement in NP." *Journal of Linguistics* 23 (1): 79–108.
- Hudson, Richard. 2003. "Gerunds without Phrase Structure." *Natural Language and Linguistic Theory* 21: 579–615.
- Ihsane, Tabea. 2008. *The Layered DP: Form and Meaning of French Indefinites*. *Linguistik Aktuell = Linguistics Today*, v. 124. Amsterdam ; Philadelphia: John Benjamins Pub. Co.
- Jackendoff, Ray. 1977. *X Syntax: A Study of Phrase Structure*. Cambridge, Mass.: MIT Press.
- Keenan, Edward. 1996. "The Semantics of Determiners." In *The Handbook of Contemporary Semantic Theory*, edited by Shalom Lappin, 41–63. Blackwell Handbooks in Linguistics. Oxford, OX, UK ; Cambridge, Mass., USA: Blackwell Reference.
- Lapointe, Steve. 1993. "Dual Lexical Categories and the Syntax of Mixed Category Phrases." In *ESCOL '93*, edited by Andreas Kathol and Michael Bernstein, 199–210. Columbus, Ohio: Ohio State University.
- . 1999. "Dual Lexical Categories vs. Phrasal Conversion in the Analysis of Gerund Phrases." In *University of Massachusetts Occasional Papers in Linguistics 24: Papers from the 25th Anniversary*, edited by Paul DeLacy and Anita Nowak, 157–89. Amherst, Mass.: GLSA Publications.
- Larson, Richard K. 1999. "Semantics of Adjectival Modification." presented at the LOT Winter School, Amsterdam, January 18.  
<http://semlab5.sbs.sunysb.edu/~rlarson/LOT%2899%29/Contents.html/index.html>.
- . 2009. "Chinese as a Reverse Ezafe Language." *Yuyanxue Luncong (Journal of Linguistics)* 39: 30–85.
- . 2014. "The Projection of DP (and DegP)." In *On Shell Structure*. Routledge Leading Linguists, #19. New York: Routledge.

- Larson, Richard K., and Hiroko Yamakido. 2006. "Zazaki 'Double Ezafe' as Double Case-Marking." In . Albuquerque, NM.  
<http://semlab5.sbs.sunysb.edu/~rlarson/lisa06ly.pdf>.
- . 2008. "Ezafe and the Deep Position of Nominal Modifiers." In *Adjectives and Adverbs. Syntax, Semantics, and Discourse*, edited by Louise McNally and Christopher Kennedy, 43–70. Oxford ; New York: Oxford University Press.
- Longobardi, Giuseppe. 1994. "Reference and Proper Names: A Theory of N-Movement in Syntax and Logical Form." *Linguistic Inquiry* 25: 609–65.
- Malouf, Robert. 2000. "Verbal Gerunds as Mixed Categories in Head-Driven Phrase Structure Grammar." In *The Nature and Function of Syntactic Categories.*, edited by Robert Borsley, 133–66. New York: Academic Press.
- Matthewson, Lisa. 2001. "Quantification and the Nature of Crosslinguistic Variation." *Natural Language Semantics* 9: 145–89.
- Moulton, Keir. 2004. "External Arguments and Gerunds." *Toronto Working Papers in Linguistics* 22: 121–36.
- Muysken, Pieter. 2008. *Functional Categories*. Cambridge; New York: Cambridge University Press.
- Newmeyer, Frederick J. 2004. "On Split-CPs, Uninterpretable Features, and the 'Perfectness' of Language." *ZAS Papers in Linguistics* 35: 399–422.
- Ogawa, Yoshiki. 2001. *A Unified Theory of Verbal and Nominal Projections*. Oxford Studies in Comparative Syntax. Oxford ; New York: Oxford University Press.
- Ouhalla, Jamal. 1991. *Functional Categories and Parametric Variation*. Theoretical Linguistics. London; New York: Routledge.
- Panagiotidis, Phoevos. 2000. "Demonstratives Determiners and Operators: The Case of Greek." *Lingua* 110: 717–42.
- . 2002. *Pronouns, Clitics and Empty Nouns: "pronominality" and Licensing in Syntax*. Amsterdam; Philadelphia: John Benjamins Pub. Co.
- . 2015. *Categorial Features: A Generative Theory of Word Class Categories*. Cambridge Studies in Linguistics 145. Cambridge; New York: Cambridge University Press.
- Payne, John. 1993. "The Headedness of Noun Phrases: Slaying the Nominal Hydra." In *Heads in Grammatical Theory*, edited by Greville G. Corbett, Norman M. Fraser, and Scott McGlashan, 114–39. Cambridge, UK: Cambridge University Press.
- Pires, Acrisio. 2006. *The Minimalist Syntax of Defective Domains: Gerunds and Infinitives*. Linguistik Aktuell = Linguistics Today, v. 98. Philadelphia: John Benjamins Pub. Co.
- Plann, Susan. 1981. "The Two *El* + Infinitive Constructions in Spanish." *Linguistic Analysis* 7: 203–40.
- Pollock, Jean-Yves. 1989. "Verb Movement, Universal Grammar, and the Structure of IP." *Linguistic Inquiry* 20 (3): 365–424.
- Preminger, Omer. 2010. "Nested Interrogatives and the Locus of Wh." In *The Complementizer Phase: Subjects and Operators*, edited by Phoevos Panagiotidis, 200–235. Oxford ; New York: Oxford University Press.
- Pullum, Geoffrey. 1991. "English Nominal Gerund Phrases as Noun Phrases with Verb Phrase Heads." *Linguistics* 29: 763–99.

- Radford, Andrew. 1990. *Syntactic Theory and the Acquisition of English Syntax: The Nature of Early Child Grammars of English*. Oxford, UK ; Cambridge, Mass., USA: Blackwell.
- . 1993. "Head-Hunting: On the Trail of the Nominal Janus." In *Heads in Grammatical Theory*, edited by Greville G. Corbett, Norman M. Fraser, and Scott McGlashan, 73–113. Cambridge, UK: Cambridge University Press.
- . 1996. "Towards a Structure-Building Model of Acquisition." In *Generative Perspectives on Language Acquisition*, edited by Harald Clahsen, 43–89. Amsterdam; Philadelphia: John Benjamins Pub. Co.
- Riemsdijk, Henk van. 1998. "Categorial Feature Magnetism: The Endocentricity and Distribution of Projections." *Journal of Comparative Germanic Linguistics* 2: 1–48.
- Rizzi, Luigi. 1997. "The Fine Structure of the Left Periphery." In *Elements of Grammar: A Handbook of Generative Syntax*, edited by Liliane M. V. Haegeman, 281–337. Dordrecht: Kluwer.
- Rosemeyer, Malte. 2012. "On the Interplay between Transitivity, Factivity and Informativity: Spanish Nominal and Verbal Infinitives." In *Aspectualidad - Transitividad - Referencialidad*, edited by Valeriano Bellosta von Colbe and Marco García García. *Studia Romanica et Linguistica*. Frankfurt am Main: Peter Lang.  
<http://www.peterlang.com/index.cfm?event=cmp.ccc.seitenstruktur.detailseiten&seitentyp=produkt&pk=70370&cid=462&concordeid=263495>.
- Roussou, Anna. 1990. "Nominalization in the Syntax of Modern Greek." MA dissertation, University College London.
- Schoorlemmer, Maaïke. 2001. "Dutch Nominalised Infinitives as Non-Identical Twins." Uil OTS Working Paper uil-ots-01005-CL/TL. Utrecht University.
- . 2002. "Adjectives and Adverbs in Dutch Nominalised Infinitives." In . Utrecht.
- Siegel, Laura. 1998. "Gerundive Nominals and the Role of Aspect." In *Proceedings of ESCOL '97*, edited by Jennifer Austin and Aaron Lawson. Ithaca, New York: Cornell Linguistics Club Publications.  
<http://www.ling.upenn.edu/~lsiegel/escolrev.pdf>.
- Svenonius, Peter. 2004. "On the Edge." In *Peripheries: Syntactic Edges and Their Effects*, edited by David Adger, Cécile De Cat, and George Tsoulas, 261–87. Dordrecht; Boston: Kluwer Academic.
- Szabolcsi, Anna. 1984. "The Possessor That Ran Away from Home." *The Linguistic Review* 3: 89–102.
- . 1994. "The Noun Phrase." In *The Syntactic Structure of Hungarian*, edited by Ferenc Kiefer and Katalin É Kiss, 179–274. *Syntax and Semantics*, v. 27. San Diego: Academic Press.
- Travis, Lisa, and Greg Lamontagne. 1992. "The Case Filter and Licensing of Empty-K." *Canadian Journal of Linguistics* 37 (2): 157–74.
- Vainikka, Anne. 1994. "Case in the Development of English Syntax." *Language Acquisition* 3: 257–325.
- Wiltschko, Martina. 2014. *The Universal Structure of Categories: Towards a Formal Typology*. Cambridge Studies in Linguistics 142. Cambridge, United Kingdom: Cambridge University Press.
- Wunderlich, Dieter. 1996. "Lexical Categories," *Theoretical linguistics*, 22 (1/2): 1–48.

- Yoon, James Hye Suk. 1996. "Nominal Gerund Phrases in English as Phrasal Zero Derivations." *Linguistics* 34: 329–56.
- Yoon, James Hye Suk, and Neus Bonet-Farran. 1991. "The Ambivalent Nature of Spanish Infinitives." In *New Analyses in Romance Linguistics: Selected Papers from the Linguistic Symposium on Romance Languages XVIII*, edited by Dieter Wanner and Douglas A. Kibbee, 353–70. Amsterdam ; Philadelphia: John Benjamins Pub. Co.
- Zamparelli, Roberto. 2000. *Layers in the Determiner Phrase*. Outstanding Dissertations in Linguistics. New York: Garland Pub.