

On Case and clauses: Subordination and the Spell-Out of non-terminals*

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The main idea suggested in this paper is that subordinate clauses need to be Case licensed (namely embedded under KPs) and that various patterns of "fusion" within a layered functional skeleton obliterate that process. I will provide two types of empirical support for this proposal. First, I will show that this proposal correctly allows for nominal elements to stand in for a whole embedded clause (using the mechanism of Phrasal Spell-Out, Starke 2009; Neeleman & Szendroi 2007). Second, I will show that a wide range of typologically unrelated languages overtly exhibit Case marking on complementizers. Also, direct evidence against the identity of relative pronouns and complementizers /subordinators, possibly suggested -prima facie- by the layered model proposed here, will be provided here with the aid of diachronic data from Akkadian and Germanic languages and synchronic data from West Iranian languages.

Keywords: *Case, complementizer, Spell-Out, subordination, syntax-morphology interface*

1 Clausal “resumption” as Phrasal Spell-Out

In this paper I will try to show that subordinate clauses need to be Case licensed (namely embedded under KPs) and that various patterns of “fusion” within a layered functional skeleton obliterate that process. I will use the mechanism of Phrasal Spell-Out to account for the fact that nominal elements, in principle, can *resume* entire clauses. Phrasal Spell-Out is a key-point of Nanosyntax¹ (but see also e.g. Neeleman & Szendroi 2007 for an alternative non-nanosyntactic use of it). Phrasal Spell-Out states that Spell-Out applies to syntactic phrases and that more than mere terminals are stored in the lexicon. This leads to the consequence that there can't be any pre-syntactic lexicon. Specifically, Phrasal Spell-Out admits lexical insertion to target non-terminal nodes, namely, phrasal nodes. If lexical morphemes/items are able to target phrasal nodes, this implies that lexical items potentially correspond to syntactic structures, not (exclusively) single heads. Hence, in principle, if a single morpheme can span several syntactic terminals, and therefore corresponds to entire syntactic phrases, in principle, nothing prevents a CP and everything below it to be spelled-out by a single morpheme.²

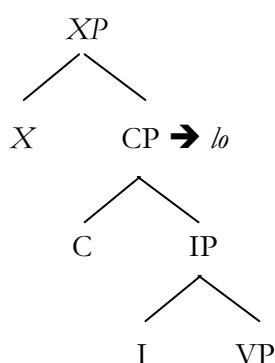
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¹ Nanosyntax is a research paradigm on the architecture of grammar under development in CASTL, Tromsø (and elsewhere) over the last few years. Nanosyntax is partially interrelated with the cartographic paradigm (see Cinque & Rizzi 2010 for introductory purposes). It originated with the works of Michal Starke on allomorphy patterns in English irregular verbs from competition in spelling out syntactic trees (Starke 2009). For a detailed illustration of the architecture of Nanosyntax you may refer to Caha (2009)'s doctoral dissertation and to Abels & Muriungi (2008).

² The lexicalization of syntactic structure, in Nanosyntax, is a post-syntactic operation and a single morpheme can lexicalize several terminals in the syntactic tree. It is governed by the *Superset*

An instance of this kind may be found, in my opinion, in Romance clitics³. Take the Italian examples in (1a,b) and see the representation in (1c) that roughly shows the idea of Phrasal Spell-Out.

- (1) a. [*Spero* [*che quella squadra retroceda*
hope-PRES.1SG that that-F.SG team downgrade-SUBJ.PRES.1SG
in serie B]]
in series B
'I hope that team downgrades to the second division.'
- b. [[*lo*] *spero*]
CL hope-PRES.1SG
'I hope so.'
- c.



The *resumptive* clitic *lo*,⁴ commonly used in standard contemporary Italian for answering strategy, in (1b) is ideally able to Spell-Out a subordinate clause. There are two possible approaches to *lo*. On the one hand, it is possible that it stands in for a noun. On the other hand, it is also a possibility that it stands in for a whole clause. The goal of this paper is to argue for the latter approach. Properly, this kind of clitic's clausal resumption may be seen as an informationally-driven device to economically Spell-Out non-terminals. The clitic in (1b) bears a set of features [at least: $\{$ ^{+ACCUSATIVE}; ^{+SINGULAR}; ^{+DEFINITE}; ^{+MALE} $\}$]. If the morpheme *lo* is assumed to be a spanning non-terminal, Nanosyntax

Principle, which has been originally proposed by Michal Starke. Following Caha (2009), it can be defined as follows:

- (i) A phonological exponent is inserted into a node if its lexical entry has a (sub-) constituent who matches that node.

³ A rough definition of the term clitic (from the Old Greek *klínein* 'to lean') can be given as follows: clitics are intermediate linguistic units (i.e. morphemes), grammatically behaving like in that they integrate with / plug into other morphemes, words or phrases to build phrases, but are phonologically bound to adjacent items, traditionally referred to as "hosts" (Zwicky 1977, 1985; Matthews 1991; Belletti 1999; Russi 2005, among many others). Note that on typological grounds, the term clitic outlines a substantially composite linguistic category, which includes pronouns, auxiliaries, determiners, negative and interrogative particles, etc. A global portrait of this category can be found in Zwicky's (1977) ground-breaking work on the field, where clitics are dichotomized into *simple* clitics and *special* clitics. Simple clitics are prosodically weak (*unstressed*) and phonologically reduced forms, which are overtly derived from corresponding strong (*stressed*) full forms (see also Cardinaletti & Starke 1999).

- ⁴ I am aware that the term "resumptive" can be a misleading tag, but I think it gets the point.

prompts us to consider an *embedded* CP roughly as in (2) (see also Bittner & Hale 1996; Williams 2003; Borer 2005 for relevant discussion).

- (2) [K_{[ase]...} [Def... [Num... [CP...]]]]

The model represented in (2) crucially relies on the idea that Case is instantiated by a (series of) functional head(s) (see Caha 2009). Natural evidence is given by those languages in which Case is realized as an independent adposition (or “Case particle”), as in the Malagasy and Khasi (an Austro-Asiatic language spoken in India) examples⁵ below in (3a,b), where the inflectional-type items within the extended projection of the noun notably are instantiated by free morphemes rather than nominal affixes (see Bittner and Hale 1996; Travis 2005).

- (3) a. *an' ny boky* (Malagasy)
 ACC DET book
 ‘the book-ACC’
 (Travis 2005)
- b. *ka la yo”ii ya ’u kblaa* (Khasi)
 she PST see [ACC the tiger]
 ‘She saw the tiger.’
 (Rabel 1961)

Bittner and Hale (1996) consider Case as the nominal counterpart of the complementizer. The parallel is represented below in (4a,b), in which we see a rough model of nominal and verbal extended projections.



As argued by Travis (2005, 327):

“There is a sense that there is a parallel projection in the verbal and nominal domains – the N/V projections are the θ -domain of the semantic heads, the D/I domains in some sense “place” the event/referent in time or space, and the C/K domains link the structure into the larger structure”.

The main idea suggested in this paper is precisely that subordinate clauses need to be Case licensed (namely embedded under KPs) and that various patterns of *fusions* within a layered functional skeleton obliterate that process. The paper is organized as follows. Cross-linguistic evidence for a feature-based decomposition of the field above the complementizer will be given in the next section. Section 3 further addresses some questions concerning the relationship between Case morphemes and clauses. Section 4 provide a substantial refinement of the model argued for in (2) and, additionally, provide

⁵ In this work, examples from the literature retain original glosses.

evidence against the identity of relative pronouns and complementizers / subordinators (*contra* Kayne 2010). Section 5 tentatively sketches the (nanosyntactic) idea that if some lexical items can spell out CP, then it is reasonable to find some lexical items can spell out IP, providing a possible example with Italian *prophrases*. The conclusions (and a foreward) follow.

2 Evidence for feature-based decompositions of Complementizers

If my assumptions are correct, we expect to find case marked and number marked clauses. In this section I offer cross-linguistic evidence for the existence of the layered structure sketched in (2).

Chomsky (2008, 159) states that: “*sometimes the phi-features of C are morphologically expressed, as in the famous West Flemish examples*”. C^0 inflects for the ϕ -features of the local subject in a number of West Germanic languages (see Hoekstra & Smits 1999). The West Flemish examples below are taken from Haegeman (1992).

- (5) a. *Kpeinzēn dan-k (ik) morgen goan.*
 I-think that-I (I) tomorrow go
 ‘I think that I’ll go tomorrow.’
- b. *Kpeinzēn da-j (gie) morgen goat.*
 I-think that-you (you) tomorrow go
 ‘I think that you’ll go tomorrow.’
- c. *Kvinden dan die boeken te diere zyn.*
 I-find that-PL the books too expensive are
 ‘I find those books too expensive’.

(Haegeman 1992)

However, the ϕ -features in (5) appear to be *below* the complementizer. Empirical evidence for a Case layer above the complementizer is provided for Ik, a Kuliak language of Mid-East Africa, by König (2002; 2008). König shows that Ik has several Case-inflected clause subordinators.⁶ See the examples in (6). I refer the reader to König (2002) for a full set of examples.

- (6) a. *bɛɖ-ɪ’a mes^a.*
 want-PRES.1SG beer-NOM
 ‘I want beer.’
- b. *bɛɖ-a mes-ík^a.*
 want-PRES.3SG beer-ACC
 ‘He wants beer.’
- c. *bɛɖ-ɪ’a ats’ ésa ηkáká-é.*
 want-PRES.1SG eat SUB-NOM food-GEN
 ‘I want to eat food (or meat).’

⁶ Notice that, as shown by the examples in (6), Ik has another interesting peculiarity in its Case system: a direct object NP has accusative Case if the subject NP is 3rd person, but nominative Case if the subject is 1st or 2nd person.

- d. *bɛd-a* *ats'* *és-íka* *ɨkáká-é.*
 want-PRES.3SG eat SUB-NOM food/meat-GEN
 'He wants to eat meat.'

(König 2002)

Other languages that have overtly Case-marked complementizers are, for instance, the Quechua languages spoken in the Andes, as shown in (7) below.

- (7) *mariacha muna-n* *xosecha* *platanu-ta* (Cuzco Dialect-Quechua)
 Maria want-PRES.3SG Jose banana-ACC
ranti-nqa *chay-ta*
 buy-FUT.3SG COMP-ACC
 'Maria wants Jose to buy banana'.

(Lefebvre & Muysken 1982)

We may argue that Romance clitics, like those in (1b), are allowed to climb up⁷ in preverbal position in order to check ^{TOPIC} features available in root-clauses only (Emonds 2004). I think that, if (2) is conceivable, it would be possible to find languages in which the K, Def, Num layers above C are spelled out with a morpheme of their own, rather than undergoing *co*-Spell-Out with the whole CP or C. Namely, to check the correctness of the structure in (2), one has to look for overtly case/definiteness/number marked complementizers *or* clauses. Turkish and Korean, for instance, provide examples of whole clauses marked with a Case in (8) and (9), respectively.

- (8) *(ben)* [*Ahmed-in* *öl-düg-ün*]-*ü* *duy-du-m.* (Turkish)
 I Ahmet-GEN die-NOM.3SG-ACC hear-PAST.1SG
 'I heard that Ahmet died.'

(Kornflit 1997)

- (9) [*ku-ka* *phyenhi* *calcinay-koiss-ki*]-*lul* *pala-n-ta.* (Korean)
 3SG-NOM comfortably get-along-PROG-NMZ-ACC hope-PRES-DECL
 '(I) hope that he is living comfortably.'

(Rhee 2011)

Cristofaro (2003) has made an extensive cross-linguistic survey of nominalization patterns for dependent verbs (Case-marked clauses), which typologically turn out to be a not uncommon strategy and Aikhenvald (2008) showed an (actually, extensive) inventory of languages with Case-marked clauses / verbs⁸. For independent psycholinguistic

⁷ Clitic *climbing* in Romance languages refers to the possibility for the clitic to attach to a V₁ in a V₁ + infinitive V₂ series (e.g., Italian *lo vorrei vedere* ~ *vorrei vederlo* 'I want to see him'. Notably this option is unavailable for French: *Elle le fera manger à lui* vs. **Elle fera le manger à lui* 'She will make him eat it'). See Rizzi (1978); Cardinaletti and Shlonsky, (2004); Cinque (2006), among many others. The item *lo* in 'lo vorrei vedere' above reasonably spells out a DP. This means that it can be argued for Italian that there are two *lo*, with the same phonological form, which spell out the same features, yet one corresponds to an entire CP and another to a DP. This is possible if we argue for a strict parallelism between D and C. This parallelism has been motivated with strong empirical observations by Szabolcsi (1994) and Pesetsky & Torrego (2001), among others.

⁸ Aikhenvald's sample of languages with cases on verbs include many Australian languages; a few languages from Central Siberia; a few languages and language families of the Americas, a few

evidence that Case-marking can *trigger* the beginning of a tensed clause, the reader may refer to the experiments designed by Miyamoto (2002) for Japanese, which is crucially another language that resorts to overt Case morphology for subordination strategies.

In addition, Heath (2005; 2010) has shown that such a marking strategy is allowed also in the nominal domain, pointing out the case of Tondi-Songway-Kiini, an *SAuxOVX* Songhay language of Mali, where $\{+/- \text{ DEFINITE}, +/- \text{ PLURAL}\}$ markers are added to the “right edge” of (fully inflected) relative clauses. See the example in (10).

- (10) *h`ɛw-`ɛy ká ǎy Ø kǎ: n-`ɛy.*
 tree-DEF.PL REL 1SG Ø remove DEF.PL
 ‘the trees that I removed.’

(Heath 2005)

Furthermore, as clearly expected, nominalized verbs/Case-marked clauses is a possible strategy for relatives;⁹ Korean provides such an example in (11), taken from Han & Kim (2004).

- (11) [_{NP} [_{IP} *e ppang-ul mek-nun*] *ai*]
e bread-ACC eat-ADN kid
 ‘The kid who is eating bread’.

(Han & Kim 2004)

Let us summarize the results of this section. If clausal resumption is analysed in terms of Phrasal Spell-Out, the model in (2) predicts challenging consequences, which in turn seems to be fed by typological evidence. Another crucial thing that clearly emerges is the following: CPs are nothing more than a cover term for a number of functional projections (as originally showed by Rizzi 1997). The *fusion* of a set of grammatical functions /structures, such as relativization, *clausal* nominalization, genitivization/ noun subordination, and actually, as shown above, complementation / clausal subordination / clause-linkage is a reflex of Case encoding /embedding.

3 Issues on Case and Clauses

However, there are at least two questions, challenging both from a typological and a theoretical viewpoint, that arise at this point.

(a) Are Case-marked subordinate clauses invariantly *nominalized*? This fact would be possibly considered as evidence against their *real* clausal nature. The answer is no. Anderson (2002), for example, has shown that in many languages (e.g. Burushaski, Ket, Uralic languages, Mongolic languages, Turkic languages, Munda languages, etc.) Case may

Oceanic languages and languages from the New Guinea area; numerous Tibeto-Burman languages and the recently discovered isolate Kusunda, spoken in Nepal. See appendix 1 of Aikhenvald (2008) for her full set of sources.

⁹ There is strong typological evidence that nominalization of subordinate clauses is not restricted to complement clauses, but also involves relative and adverbial clauses, as shown by Givón (2009). See also Watters (2002) for a detailed discussion of Kham, a Tibeto-Burman language, which provides a very clear example of this sort.

attach directly either to the tense/person inflected verb (12), to a verb stem (13) or even to a full finite verb form (14).

- (12) *sra'* *nɨŋ* *kodia-hað-oŋ* *ŋo:-ŋ* *desuma'* (Enets)
 snow-GEN on sleep-ABL.PX.1SG leg-1SG get.sick-AOR.3SG
 ‘since I was sleeping on the snow, my leg got sick.’
 (Künnap 1999)

- (13) *ɣəme-ɣtə* *nelɣe-n* *ɣəm-nan* *tə-tt'ə-ɣ'ə-n* (Chukchi)
 hang-up-ALL pelt-ABS I-ERG 1SUBJ-knock-over-PERF.3OBJ
əweyo ʿɣən
 vessel-ABS
 ‘when I hung up the pelt, I knocked over the vessel.’
 (Kämpfe & Volodin 1995)

- (14) *bu* *ətnas* *du-ɣ-a-raq-diŋal* *doŋ* *sikɨ* *u-ɣoŋ* (Ket)
 he we-INS/COM I-MTS-PRES-live-ABL three year-PL PAST.3SG-go
 ‘three years have passed since he’s been living with us’.
 (Werner 1997)

(b) Are Case-marked complementizers examples of (merely) “retained morphology” in a (possibly ongoing) grammaticalization¹⁰ process? The answer again is no, given the contemporary presence of untied complementizers and Case markers in the subordinate clauses of some languages. Burushaski provides such an example in (15). In (15) the dative morpheme *ar* is crucially independently realized on the adverbial temporal clause, with the concomitant presence of the morphologically overt complementizer *ke*.

- (15) *jě gir-á-m-ar* *ke* *in* *m-m-i*
 I arrive-1SG.AP.DAT COMP he go-AP-I
 ‘after I arrived (in the village) he went.’
 (Berger 1998)

A less direct, but crucial evidence against an account based on Case morphology as “inert waste” over grammaticalized complementizers would be given by a language with morphosyntactic strategies allowing both direct *nominalizers* on subordinate verbs and case-inflected complementizers, licensing complement clauses. Languages that behave in this way exist. An instance of this kind is the Khoekhoe language, or Khoekhoegowab (also known by the ethnic term Nàmá), which belongs to the Khoe languages, and is spoken in Namibia, Botswana, and South Africa. Hengeveld & MacKenzie (2008, 366) argue that the selection of complement clause types in Khoekhoe is triggered by the nature of the interpersonal or representational layers underlying them, namely for functional-pragmatic reasons. The relevant fact here is that we have two *active* morpho-syntactic strategies available to encode clausal embedding, namely Case-marked

¹⁰ Heine (2008), for instance, interpreted Case driven subordination as a diachronic *scenario*, describing the growth of complement clauses out of nominal complements via clause expansion or, less specifically, a grammaticalization process leading from nominal to clausal morpho-syntax.

complementizers as shown in (16a,b) and direct Case-based nominalization as shown in (16c).

- (16) a. // 'úp ke 'am'a-se kèrè =/om [/'aé/ /amsà xuí-kxm
 he DECL true-ADV REM.PST believe Windhoek from-1.DU
 /xú háa !xáís-à]
 come PFV COMP-ACC
 'He really believed that we had come from Windhoek.'
 (Hagman 1973)
- b. Tsĩĩ // 'ĩp-à-kxm` ke kè mĩĩpa [/'ũ-u-kxm
 and 3.SG.M-ACC-1.DU.M DECL REM.PST tell go-1.DU
 ta !xáís-à].
 IMPF COMP-ACC
 'And we told him that we were going.'
 (Hagman 1973)
- c. //b ge [xoas-à] a #an
 he DECL write-ACC/NMLZ PRS can
 'He can write.'
 (Olpp 1977)

The typological evidence brought to bear on the questions above seems to show that Universal Grammar allows Case and complementizers to be instantiated at the same time in (full finite) subordinate clauses, motivating the structure proposed in (2), coherently with a fine-grained syntactic structure decomposed into many layers, as proposed in the nanosyntactic and cartographic paradigms.

4 Complementizers are not relative pronouns

Relying on Roberts and Roussou (2003), who argue that the item *that* in English can be parsed as either a complementizer or a demonstrative (depending on whether it ranges over individuals or propositions), Kayne (2010) argues that the complementizer *that* is nothing else but the relative pronoun *that*¹¹ (see also Arsenijević 2009 for a similar approach; and Sportiche 2011, for relevant discussion). The identity of relative pronouns and complementizers/subordinators, is also suggested *-prima facie-* by the layered model proposed here: I have assumed a plethora of nominal features above the complementizer and this kind of features are likely to be morpho-syntactic exponents of relative pronouns. Why is it possible to share this kind of features? Manzini and Savoia (2003) have given an explanation, claiming that (at least) Romance complementizers are essentially *nominal* elements, taking embedded clauses as their complement. The main trigger for this idea is the empirical fact that the Italian word *che* can be employed both as a wh-item and as a complementizer, as shown in (17a,b).

¹¹ Notice that Kayne's (1975) classical argument is, on the contrary, that French relative pronoun *que* is really the *que* complementizer.

That being so, I think that the Italian clitic *lo* introduced in (1) is likely to phrasally spell-out the KP node, containing the clausal complement as well as the light noun and the nominal features in the λ field on top of it. Our model, even if revised in light of Manzini & Savoia’s (2003) claims, is clearly incompatible with proposals that suggest the identity of complementizers and (silent) λ items (or elements in λ s’ extended projection). To empirically motivate the structure sketched in (18), we have to find a language in which subordinators/complementizers and clearly identifiable nominal-like elements (i.e. demonstratives) selecting an embedded clause are instantiated at the same time, independently.

Akkadian, an extinct SOV Semitic language described in Deutscher (2000; 2001; 2009a, 2009b), which was spoken in ancient Mesopotamia, provides such an example. Considering its diachronic stages in details, Akkadian relative clauses clearly show that relative pronouns and (real) subordinators within the extended projection of the dependent verb are independent components and that relative pronouns are actually generated outside of the embedded clause. Akkadian is attested from written sources over ca. two millennia, starting around 2500 BC. The period ranging from 2500 BC to 2000 BC is typically labelled as ‘Old Akkadian’. The principal genre of relative clauses in Old Akkadian was marked by an item that was originally employed as a demonstrative pronoun. Old Akkadian’s demonstrative pronouns declined for case, gender and number, as shown in (19) below (adapted from Deutscher 2001, 406):

(19)		NOM.	ACC.	GEN.
	MASC.SG.	š <u>u</u>	ša	ši
	MASC.PL.	š <u>ūt</u>	šūt	šūti
	FEM.	š <u>āt</u>	šāt	šāti

The demonstrative pronoun *šu* agreed in Case with its antecedent, namely, with the head NP of the root clause.¹³ It follows that *šu* did not encode/indicate the role of the relativized NP. See the examples in (20a,b). The first one is from Deutscher (2001) and the second one is from Deutscher (2009a):

- (20) a. *Šarru-kēn šar mā-tim [šu Enlil māhīr-a lā*
 Sargon king-OF land-GEM [REL(NOM.M.SG) Enlil rival-ACC not
iddin-u-šum]
 he.gave-COMPL-to him]
 ‘Sargon, king of the land, that Enlil has not given him a rival, [did so and so]...’
 (i.e. Sargon, king of the land, to whom (the god) Enlil has given no rival, [did so and so])

¹³ This behaviour resembles the phenomenon labelled “(inverse) Case attraction” in Ancient Greek, Latin (see Bianchi 1999) and, also, Old Iranian and Avestan (Seiler 1960, cited in Haig 2011), where the relative pronoun happens to take, in given particular contexts, the case of the head-noun. This phenomenon is still attested in contemporary Persian (Aghaei 2006) and generally in (Eastern and Western) Iranian Languages (see the descriptions collected in Windfuhr 2009).

- b. *eql-am* [ša ... *nītiq-u*] *lišqi'ū*
 field-ACC [REL(ACC.M.SG) we.passed-COMPL] they.should.water
 'They should water the field that we passed'.

Notice that, crucially, the verbs in the dependent clauses in (20a,b) are suffixed by a subordinator marker, which usually takes the form *-u*, but in Old Akkadian can also take the form *-u(i)*, and signals whether a given clause is a root clause or a dependent clause (see Deutscher 2009b, 57-61). This fact is essential from our viewpoint because it demonstrates that we can have unequivocal (verbal) complementizers, detached from an autonomous λ item (specifically in Akkadian, the demonstrative pronoun). Consider now the example in (21).

- (21) [*kīma* *še'-am* *lā* *imūr-u*] [*atta* *īde*]
 COMP barley-ACC NEG-DEP 3SG.received-COMP 2MSG-NOM 2MSG-know
 'You know that he didn't receive the barley'.
 (Deutscher 2009b)

As fully expected (for a SOV language), the verbal complementizer *-u* is in clause final position. However, there is another complementizer-like element in (21), the word *kīma*, which following Deutscher (2000) is composed of a preposition with a very wide (fuzzy) semantic range, *kī-*, and an emphatic particle, *-ma*. It is realistic to consider the item *kīma* and the suffix *-u* as the two poles of a decomposed complementizer field, namely *finiteness* and *force*, along the lines of Rizzi's (1997) original proposal.¹⁴ As pointed

¹⁴ Notice that it is not difficult to derive, in antisymmetric terms, the sandwiched structure {_{FORCE-CLAUSE-FIN}} of (21). Notice also that the existence of language with two subordinators/complementizers, instantiated at the same time in a dependent clause, is another empirical fact that weakens Kayne's (2010) proposal (but see Kayne 2010, 223-224 for a solution that resorts to possible hidden *cleft* structures). Paoli (2007), for instance, has shown that two north Italian dialects –Turinense and Ligurian– realize “double *che*” constructions. See the examples in (i) and (ii).

- (i) *Gioanin a spera che Ghitin ch'as nē vada tōst*
 John SCL hope-PRES.3SG that Margaret that SCL+RFL PART go-SUBJ.3SG soon
 'John hopes that Margaret leaves soon' (Turinense)
 (Paoli 2007)
- (ii) *A Teeja a credda che a Maria ch'a parta*
 the Teresa SCL believe-PRES.3SG that the Mary that SCL leave-SUBJ.3SG
 'Teresa believes that Mary is leaving' (Ligurian)
 (Paoli 2007)

It is possible to assume, in a cartographic perspective, that the first *che* is hosted in *Force*, while the second *che* occupies *Finiteness*. Notice that the second *che* is overt only if the verb in the dependent clause is in subjunctive mood. The explanation given by Paoli (2007) is basically that the lower *che* moves from MoodP, in a stretched IP field (see Pollock 1989; Belletti 1990; Cinque 1999), to FinP to check [+MOOD] features.

The phenomenon of a double complementation is not uncommon cross-linguistically. It is also attested in a set of East Iranian languages. See the example below in (iii) from Shughni, which is a language spoken in West Pamir (see Edelman & Dodykhudoeva 2009).

- (iii) *yid-ik-u corik idi vegi-y-um di ar bozor ca wint*
 this-very-he man COMP yesterday-I him at bazaar COMP saw
 'This is a man whom I saw at the bazaar yesterday'
 (Edelman & Dodykhudoeva 2009)

In Shughni, restrictive clauses have the antecedent marked by pronominal forms with the particle *(y) ik-*, followed by the complementizer *idi* (or *ide*), with an (optional) lower

out by an anonymous reviewer, the example (21) shows that it is not possible to analyze *ša* as a complementizer. That is, if the complementizer field has two complementizer positions, and these are filled by *kīma* and *-u*.

Turning again to the diachronic development of Akkadian relative clauses, we find that, in later stages of Akkadian (ca. after 2000 BC), the agreement features on the demonstrative pronouns that introduce the relative clause were thrashed, and the item *ša* in (19) the original singular masculine accusative- emerged as an invariant relativizer (see Deutscher 2001; 2009a for further details), as shown in (22) below:

- (22) *awīl-um* [*ša ana bull-īm* *illik-u*]
 man-NOM REL to extinguish-INF-GEN he.went-SUB
 ‘the man that went to extinguish it..’

(Deutscher 2009a)

At this point it is quite clear that we still have two distinct elements involved in the marking of a dependent clause: (a) the (grammaticalized) λ element *ša* and (b) the complementizer/subordinator *-u*, realized as a suffix on the dependent verb. Given the fact that the Akkadian relativizer unambiguously originates from a demonstrative pronoun, Akkadian may seem *prima facie* to merely instantiate a *parataxis* to *hypotaxis* process, which is assumed to be a standard line of diachronic development in natural languages in the literature (see Heine & Kuteva 2002; 2007; Roberts & Roussou 2003; Kayne 2010; Kiparsky 2008). However, Deutscher (2001) showed that the development of Akkadian relative clauses is clearly unrelated to a *parataxis* to *hypotaxis* shift, and his way of reasoning can be summarized as follows. Akkadian had both head and dependent marking in the genitival construct -adopting the terminology of Nichols (1986) - where the dependent item is encoded with a genitive Case-marker, and the head-noun is marked by what Deutscher (2001) calls the *construct state*. The construct state is signalled by the lack of an overt case suffix on a noun as shown in (23).

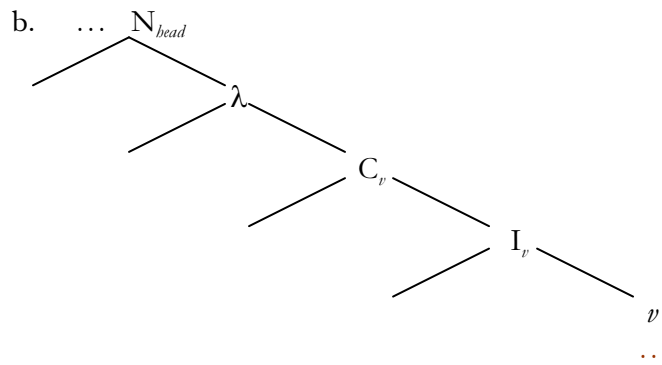
- (23) *dīn* *šarr-īm*
 judgment-OF (CONSTRUCT STATE) king-GEN
 ‘the judgment of the king’

(Deutscher, 2001)

In the example above, the noun *dīn*, which usually surfaces with a case marker (e.g. NOM: *dīn-um*, ACC: *dīn-am*, GEN: *dīn-īm*), simply appears as *dīn* in the construct state. At this point, the crucial fact is that apart from the main productive type of relative clauses introduced by a relative/demonstrative pronoun, as shown above in (20a,b) and (22), Akkadian had another kind of (older) relative constructions, namely relatives in which there are no demonstratives as relative markers and the onset of the dependent clause is only signalled with the aid of the construct state (subtractively) added to the head noun.¹⁵

complementizer/subordinator item, *ca*. Notice that in Shughni the item *ca* is clause-internal, and this is a feature extremely rare cross-linguistically, but widespread within East Iranian languages (from Ossetic, spoken in the Central Caucasus to Wakhi, spoken along the Wakhan River in Tajikistan/Afghanistan; See Erschler & Volk 2010).

¹⁵ Notice that, considering these Akkadian data, there seems to be a strong relationship between the grammar of *genitival* constructions and the grammar of relatives clauses. This fact is



It is arguable that grammaticalization processes (integration, condensation, exaptation and so on; see Lass 1997) tend to obliterate the structures shown in (26a,b). For instance, Akkadian demonstrative pronouns were, at the very beginning, independent case inflected heads of a relative clause and then, became mere marker of the onset of the dependent clause. Possibly, cross-linguistically there is a strong tendency to spell-out stretches of adjacent nodes with a single word/morpheme: patterns of *fusion* emerge and λ elements can be (con)fused with verbal complementizers. Anyway, there are clear hints that functional architectures as those depicted in (26a,b) (possibly far more layered) hold as a Universal Grammar constraint, which in turn forces a universal structure of Merge.

Data from Germanic languages, retrieved again from Deutscher (2001), are crucial for rejecting the proposal of an identity of complementizers and λ elements. Old Icelandic, for instance, had an invariable particle, *es*, which “could introduce relative clauses on its own” (Deutscher 2001, 415). See the example in (27) below.

- (27) *vóro þar þeir menn [es Norðmenn kalla Papa]*
 there were there those men-HEAD.COMP Northmen call Papa
 ‘there were there those men that Northmen call Papas’.
 (Stong-Jensen 1977)

In Old Icelandic, however, there was a type of relative clause headed by a case-inflected demonstrative pronoun as shown in (28a,b).

- (28) a. *ok blótaðe brafna þrjá þá [es*
 and worshipped ravens three-ACC.M.PL those-ACC.M.PL [REL
hánom skylldo leið vísa]
 him should way show]
 ‘and he worshipped three ravens, those that should show him the way’.
 (Stong-Jensen 1977)

- b. *ok fjórir tígur nauta með henne þeirra*
 and forty cattle-GEN.N.PL with her those-GEN.N.PL
[es aoll vóro frá henne kómen].
 [REL all were from her come
 ‘and forty cattle with her, those that were all come from her’
 (Stong-Jensen 1977)

Notice that in (28a,b) the pronoun agrees in Case with the antecedent in the main clause (as in Old Akkadian). Notice also that constructions like those shown for Old Icelandic in (27) and (28a,b) are attested in Old English, with the invariable particle *þe/ðe* roughly corresponding to Icelandic *es* and that such a pattern can also be also argued for Gothic, with the invariable particle *ei*. In our view, those items were the prototypical complementizers / subordination markers, and subordinate clauses were originally headed by light nouns/pronouns (what we have called λ s) acting as “bridges of features” between matrix and dependent clauses.

Further evidence can be found in West Iranian languages. In these languages there is a sort of *multipurpose* particle/morpheme in the noun phrase (basically acting as a linker to modifiers), called *Ezafe*, which gives rise to the *Ezafe* construction (see e.g. Ghomeshi 1997; and Samvelian 2007 for detailed descriptions and analyses) quite reminiscent of the Akkadian (Semitic) *construct state* construction described above.¹⁶

It has been demonstrated that the *Ezafe* morpheme originates from the Old Iranian demonstrative pronoun *hya* (*tya-*) (see Meillet 1931; Haider & Zwanziger 1984; Bubenik 2009) and it can crucially be used to introduce a relative clause.¹⁷ See the examples below in (29) from the Bahdînî dialect of Kurdish, taken from Haig (2011).

- (29) a. *tîšt'-ê* [*min day-av bînga*]_{RC}
 thing-EZ.PL 1SG.OBL give-PST.POSTV 2PL-OBL
 ‘The things [I gave to you (PL).]’
 (Haig 2011)
- b. *aw kâs-ê* [*awwîlî b-ê-t*]_{RC}
 DEM person-EZ.M first SUBJ-come-PRES-3SG
 ‘that person [who shall come first.]’ (MacKenzie 1961)
- c. *cîrok-a* [*ku wî jî min re got*]_{RC}
 story-EZ.F COMP 3S.OBL ADP 1SG.OBL ADP say-PST.3S
 ‘The story [that he told me.]’
 (Haig 2011)

¹⁶ See the examples below in (i) from Persian and Tajik for a set of (linking) functions accomplished by the *Ezafe* morpheme (which appears here as the unstressed vowel *e-*; *-i*), taken from Windfuhr & Perry (2009, 473):

- (i)
 PREDICATE > *asman-e abi* / *losmon-i- obi* ‘blue sky’; Persian/Tajik
 EVENT > *ruz-e enqelab* / *ruz-i inqilob* ‘the day of revolution’ - ‘revolution day’;
 POSSESSOR > *kitab-e Hasan* / *kitab-i Hasan* ‘the book of Hasan’ - ‘Hasan’s book’;
 AGENT > *kar-e mardom* / *kor-i mardum* ‘the work of people’;
 PATIENT > *qatl-e Hoseyn* / *qatl-i Husayn* ‘the murder of Hoseyn’;
 PURPOSE > *daru-ye gerip* / *daru-yi gripp* ‘flu medicine’;
 GOAL > *rah-e Tehran* / *roh-i Dusanbe* ‘the road of / to Tehran, Dushanbe’;
 LOCATION TIME > *mardom-e inja*, *emruz* / *mardum-i injo*, *imruz* ‘people of today’;
 ORIGIN > *ahl-e Tehran* / *ahl-i Dusanbe* ‘inhabitant of Tehran, Dushanbe’;
 SOURCE, CAUSE > *ab-e cesme* / *ob-i casma* ‘water of well’ - ‘well-water’;
 SUBSTANCE > *gombad-e tala* / *gunbad-i-talo* ‘dome of gold’;
 ELEMENT > *anbuh-e sa* ‘el-an’ / *anbuh-i so* ‘ii-on’ ‘crowd of pilgrims’
 PART > *do najar-e an-ha* / *du nafar-i on-ho* ‘two (persons) of them’.

¹⁷ In Standard Contemporary Persian, (restrictive) relative clauses are introduced by the morpheme *-i*, which can be considered an allomorph of the *Ezafe* morpheme *-e* (see Kahnemuyipour 2000; Windfuhr and Perry 2009).

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