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Silent heads

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1. Introduction[*]

Our starting point is the following famous quotation:

> A related question is whether we should take the entire array of functional projections to be present in every sentence. I will suggest that this is the least costly assumption, once we recognize that **each head comes with a marked and a default value** … This conclusion, if correct, opens up a new view of clausal structure – one that is further removed from what we see, but no less interesting, for that (Cinque 1999:127; emphasis added)

This assumption, which we dub CINQUE'S GENERALIZATION, touches on classical and central questions in linguistic and philosophical inquiry:

Q1: Does the absence of an overt marker of category X in language or construction Y provide evidence or even only 'circumstantial probability' that X is radically absent from Y?
Q2: To what extent can we expect individual 'external' languages to reflect and bear on universal 'internal' language (Universal Grammar, UG)?

Like Cinque, we answer the first question negatively: Grammatical categories–features and/or heads in our understanding–are commonly present and syntactically active even when silent. That is, the mere silence or non-marking of a category F does *not* alone warrant the conclusion that F is syntactically absent from either a construction/clause or a language. Thus, even if a feature like tense or definiteness may never be grammatically marked in some language, or in some construction/sentence type within a language, it does not follow that it is inoperative in the language or construction/sentence type in question. To the extent that the

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faculty of language is a 'given' innate system, it 'comes free', as a whole (like a reflex), in any language and in any clausal structure. One could thus argue or at least suspect that tailor-making some subparts of this system for certain clause types, like control infinitives or ECM constructions, is *more* costly than 'instinctively' projecting one and the same given, universal structure for all clauses or even utterances, with different features set to default or 'switched off' in different constructions.

The second question is closely related to the first one. As far as we can judge, it does not have a straightforward answer: "To a considerable but unknown extent" is as close as one can get on the basis of present day knowledge, it seems. Another very simple answer in the same vein would be this: Any 'external' language tells us *something but not everything* about universal 'internal' language. It follows that Icelandic Sign Language probably tells us as much about UG as, say, oral German or Mandarin. A logical conclusion of that is that Icelandic Sign Language and oral German and Mandarin only bear *directly* on UG inasmuch as they have common grammatical features–suggesting, for instance, that eyebrow markers, nominative case or subject-verb agreement are not simple or automatic reflexes of UG; perhaps they are even only properties of individual 'external' languages, a reasonable thought in view of the fact that some languages have more than a dozen cases while other languages have none (to mention only one type of variation).[1] If so, some features of individual languages arise in the externalizing, expressive component of language (PF), rather than being a part of or even a reflection of the internal conceptual system commonly referred to as UG. As manual and facial sign systems are highly effective expression modes, it seems reasonable to question the assumption that there is something about the PF component of *oral* languages that is 'more linguistic' than any other motoric mode of expression (cf. MacNeilage 2008). Indeed, since there are various well-known 'non-oral' ways of signing at least parts of language, with smoke, flags, hieroglyphics, etc. (in the sense that hieroglyphics were deciphered without any access to their ancient oral 'base'), we can see no reason why it should not be possible to, for instance, dance language to a considerable extent, given a persistent social or biological (hereditary) need to do so over a sufficiently long period of time. Such a language would presumably give rise to 'dance linguistics', with 'dance morphemes', etc.

All this seems to suggest that the PF of oral languages is not really part of or even (directly) related to universal internal language. Instead, it might be an independent externalization system, cooperating or communicating with UG, but having more in common with other motoric systems (such as the system of walking) than with UG. If so, individual 'external' languages, oral or not, are not very likely to bear in any direct or simple manner on

[1] Languages apply various means, other than case or in addition to case, to mark the relation between an NP and its linguistic environment, most commonly some marking of a non-NP member of the relevant syntactic relation: adpositions, particles, verbs, complementizers, adverbs, …

UG. That is, the absence of overt marking of some particular category in some particular language or construction/clause does not have to be very telling about underlying structure.

The negative evidence of grammatical silence, then, is arguably weak, if any at all, as suggested by Cinque's Generalization. That, in turn, raises the question of how strong the (putative) positive evidence of overt grammatical marking can be. In other words: Does the overt marking of a particular category, say, past tense, feminine gender or nominative case decisively tell us that the category in question belongs to UG? Again, there is no simple answer. It is clear, though, that neither individual categories, like gender or case, nor their specific values, like the liquid 'gender' category in Fula or Fulfulde (Corbett 1991:31) or allative case in Finnish are universal in the simple sense of being overtly marked in all languages. Abstract 'Case' and abstract 'Gender' might be universal categories in some sense, but any claim to that effect requires that one explain not only the nature of these putative underlying categories but also how they relate to overt markings–and non-markings–of case and gender in at least some languages.

2. Person

We are optimistic that categories like Tense, Person, Number, Gender, and perhaps even Case at least indirectly represent or reflect universal categories. It is evident, however, that they do *not* reflect simplex features in a one-to-one fashion, instead 'interpreting' or 'translating' complex underlying relations. Thus, one can analyze person values like 1 person, etc., as the result of two matching relations, one structurally low, yielding +/–**P**(erso)**n** (where non-humans are –Pn in unmarked cases), and another, structurally higher, yielding the values 1, 2, and 3 for +Pn arguments (Sigurðsson 2004). Crucially, these values do not simply reflect 'first person', etc., but different settings of two underlying binary features, +/– SPEAKER and +/–HEARER. The combinatory effects of the lower +/–Pn matching and the higher speaker/hearer matching are illustrated in (1)–(3), where the arrow reads 'valued as':

(1) $NP_{\alpha Pn} \rightarrow NP_{+Pn}$ or NP_{-Pn}
(2) –Pn $\rightarrow$ 3P by default

(3) a. +Pn $\rightarrow$ –SPEAKER, –HEARER = 3P by computation (matching)
b. +Pn $\rightarrow$ –SPEAKER, +HEARER = 2P by computation
c. +Pn $\rightarrow$ +SPEAKER, –HEARER = 1P by computation

As argued in Sigurðsson (2004), though, 'logophoric agent' (Λ_A) and 'logophoric patient' (Λ_P) are more pertinent terms than the common 'speaker' and 'hearer'. That is:

(3)' a. +Pn → $-\Lambda_A, -\Lambda_P$ = 3P by computation

b. +Pn → $-\Lambda_A, +\Lambda_P$ = 2P by computation

c. +Pn → $+\Lambda_A, -\Lambda_P$ = 1P by computation

The 'no person' approach to the 3 person (of Benveniste 1966 and others) has long been tantalizingly 'correct and incorrect'. The dilemma disappears under the present approach: Some formally 3 person arguments are 'non-personal', as in (2), while other such arguments are 'personal', as in (3a)/(3a)'.

This understanding can be implemented in a cartographic approach to clausal structure, where Pn, N(umbe)r and T(ense) are clausal heads in the IP domain, whereas Λ_A and Λ_P are heads in the CP domain:[2]

(4) $[_{CP}$ ... Force… Top … Λ_A … Λ_P … Fin ... $[_{IP}$ … Pn ... Nr … T ... $[_{vP}$ v … $NP_{\alpha Pn}$ ...]]

Pn, then, enters a matching (Agree) relation with $NP_{\alpha Pn}$, valuing it as NP_{+Pn} or NP_{-Pn} and commonly attracting it into its vicinity, NP_{+Pn} in turn matching Λ_A and Λ_P (resulting in 1, 2, or 3 person) usually under long distance Agree, without concomitant movement.[3] In general, the IP domain of grammatical features mediates between the *context domain* of the CP and the *content domain* of the vP (cf. Platzack 2001). Thus, features of the *grammatical IP domain*, including, Pn, Nr, and T, are not contentless Agr elements in the sense of Chomsky (1995 *et seq*.). Rather, they enter syntax as interpretable but unvalued features, to be assigned some value in the course of the derivation. What is uninterpretable is the overt morphological agreement reflection of these categories (in languages that have such agreement), not the Person, Number and Tense categories themselves. Pn and Nr (and perhaps also T) are matched by an argument, and the argument may in turn trigger agreement of, for instance, finite and non-finite verb forms, but such agreement is a semantically uninterpretable morphological (PF) 'by-product'.

The numeration, thus, does not contain any fixed phi-features for arguments. Rather, their phi-values are computed in syntax in relation to both grammatical features of the IP domain and context-linking features of the CP domain, as just described for person. Thus, in a dialogue like (Sandra): "***I** will buy the tickets.*" (John): "*No, **I** want to pay myself*", the addressing BUYER in the first clause and the answering PAYER in the second clause can only

[2] We abstract away from a number of categories, including Foc(us). The interaction of Nr with Pn and the in-/exclusiveness of plural arguments are complex issues, which we will not discuss here.

[3] But for arguments that subject clitics might be special in being attracted into the CP domain by the speaker/hearer features, here Λ_A and Λ_P, see Poletto 2000.

get assigned the 1 person value by virtue of positively matching two distinct occurrences of Λ_A, in two distinct CP domains. In both cases $NP_{\alpha Phi}$ of $CP_i = \Lambda_A$ of CP_i, hence represented or signaled in post-syntactic morphology/PF as *I* ([ai:]). In other words, the meaning represented by the lexical (PF) item *I* is not 'I' or 'first person singular' (neither paraphrase has any real meaning) but the speaker or 'the Λ_A of the CP_i containing (dominating) *I*'. We can thus think of 'person' as a grammatical category that links arguments or *propositional event participants* ('theta roles') to the *speech event participants* (Λ_A and Λ_P), as identical with them (positive matching) or distinct from them (negative matching).

If this is on the right track, the CP domain contains a number of *heads* that are themselves *silent* but enter a matching or an Agree relation with IP internal grammatical features (which in turn enter a matching relation with contentful vP internal features). Silent CP domain heads include not only Force and information structure features (in the spirit of Rizzi 1997), but also features of the speech event, such as Λ_A and Λ_P. Features of this sort are commonly assumed to belong to pragmatics or some other non-syntactic subsystem of language or mind (see Huang 2007, for example). We will briefly address the question of why it is reasonable to conceive of these silent features as *syntactic* at the end of this paper (cf also the general approach in Kayne 2005).

3. Tense

Like Person, Tense is among the grammatical categories that are commonly thought of as being prime candidates for universality. However, also Tense seems to be a complex grammatical IP category. It corresponds closely to the *reference time*, **R**, which relates *event time*, **E**, and *speech time*, **S**, in the classical Reichenbachian approach to tense (see Reichenbach 1947).[4] More specifically, non-finite verb forms express a relation between E and R, whereas finite verb forms express a relation between S and R (or, rather, between S and the E ↔ R matching relation, see below and the discussion in Hornstein 1990; Giorgi and Pianesi 1997: Cinque 1999:81ff; Julien 2001). To illustrate this we will be using the following connectives:[5]

(5)	a.	=	unshifted (present/untensed)	'simultaneously as'
	b.	≥	–FUTURE (present/past)	'no later than'
	c.	>	+PAST	'sooner than' ('before')

[4] We conceive of these notions simply as punctual, rather than as intervals (we suspect that interval analyses might be reduced to punctual ones, but we don't have to take a stand on the issue here). Also, we do not make a distinction between speech time, S, and perspective time, P (on both these issues, see Kiparsky 2002, Sigurðsson 2010a, and the references cited there).

[5] The following discussion is largely based on Sigurðsson (2008, 2010a, 2010b).

d.	≤	–PAST (present/future)	'no sooner than'
e.	<	+FUTURE	'later than' ('after')

In languages like English and Icelandic, three NON-FINITE TENSE relations can be discerned:[6]

(6) Non-finite tenses

a.	E	=	R	unshifted	as in (most) gerunds[7]	*working*
b.	E	≥	R	present/past	as in past participles	(has/had) *worked*
c.	E	≤	R	present/future	as in infinitives	(to) *work*

The clear-cut past (>) and future (<) relations between E and R are not disambiguated by grammatical or systematic means in languages of this type, instead being subsumed under the more general, ambiguous relations present/past (≥) and present/future (≤). This ambiguity of the non-finite tenses seems to be a widespread phenomenon cross-linguistically, but, as comparative knowledge of tense systems is limited and commonly unreliable, we have not been able to get any clear idea of how widespread it might be.

Infinitives may have a simultaneous reading, but, as widely acknowledged (since Stowell 1982), they may commonly also have a shifted, future reading (depending on several factors), whereas a past reading is excluded:

(7) a.	She is trying *to read* the book now, evidently with some success.	SIMULTANEOUS
b.	She hopes *to read* the book tomorrow.	FUTURE
c.	* She claims *to read* the book yesterday.	* PAST
d.	(^{ok}She claims to *have read* the book yesterday.)	

Both the simultaneous reading in (7a) and the future reading in (7b) are subsumed under the present/future relation, E ≤ R (E here being the time of reading and R being the time of trying and hoping in the matrix clauses).

As has often been noticed, past participles need not always be semantically past but may also have a simultaneous reading, under certain circumstances. This is illustrated in (8):

(8) a. For the last 30 years she has *arrived* at 9 a.m. sharp!
b. Tomorrow, this book will be *read* here at seven o'clock.

[6] Gerunds and participles are often assumed to have aspectual as well as temporal readings. It is not clear to us that the aspectual readings cannot be derived from the temporal ones, but we will not discuss this here.

[7] We agree with Stowell (1982:563) that "the understood tense of the gerund is completely malleable to the semantics of the governing verb", at least in unmarked cases. Hornstein (1990:115ff), in contrast, argues that gerunds have their own temporal structure.

The canonical temporal reading of the participles here is simultaneous or 'including' with respect to the reference time ('9 a.m. sharp' in (8a) and 'seven o'clock tomorrow' in (8b)). In contrast, a future reading (of the participle itself) *is* excluded, that is, the sentence in (8a), for instance, cannot mean that the the arriving has happened *after* '9 a.m. sharp'.

Past participles are of course frequently used to express past events:

(9) I have read this book.

However, a 'definitely past reading' is compatible with but not forced by the basic non-future reading of the participle. The common past reading of past participles stems from the pragmatic inference that –FUTURE events are likely to have taken place in the past. Indeed, the fact that past participles express a non-future reading (≥) and that infinitives express a non-past reading (≤) makes them compatible with each other, yielding a simultaneous reading (=), as in (8b) above.

The non-finite tenses in (6) can all combine with the finite tenses, expressing the relation between the E ↔ R matching relation and the speech time, S, yielding a second order relation (E ↔ R) ↔ S. The simple tenses relate (E = R) with S, as sketched in (10):

(10)	Non-finite	Finite	*Reading*	*Morphology*	*Example*
a.	(E = R)	> S	past	past	She left
b.	(E = R)	≤ S	present/future	present	She leaves
c.	(E = R)	< S	future	auxiliary	She will leave

A pure present tense, *(E = R) = S*, unambiguous for all or at least most verb classes, is absent (from the simple tense system). In addition, the past/present or non-future relation *(E = R) ≥ S* is systematically absent in finite tense systems like the English/Icelandic one.[8]

Relating past participles ((E ≥ R), cf. (6b)) to S yields the PERFECT TENSE system, as sketched for the English/Icelandic language type in (11):

(11)	Non–finite	Finite	*Construction*	*Example*
a.	(E ≥ R)	> S	**perfect**, past	She had **read** the book
b.	(E ≥ R)	= S	**perfect**, present	She has **read** the book
c.	(E ≥ R)	< S	**perfect**, future	She will have **read** the book

[8] It is cross-linguistically rare (see Comrie 1985:49). It is perhaps also worth pointing out here that there are many more or less well-known differences with regard to the distribution of verbal categories (past, present, present perfect, etc.) within the Germanic languages as well as between individual Germanic and Romance languages (see e.g. Giorgi and Pianese 1997). For reasons of space, we cannot discuss these differences here.

Thus, while the E ↔ R relation is ambiguous (either E = R or E > R), the three relations between (E ↔ R) and S are all unambiguous, both ≥ S (present/past) and ≤ S (present/future) being absent here.[9] These gaps in the perfect tense system are presumably not coincidental; languages commonly avoiding simultaneous ambiguity of event time and reference time.

The present perfect is commonly incompatible with adverbial specification of time, as in *She has eaten breakfast (*at 9)*, a phenomenon known as the 'present perfect puzzle' (see Kiparsky 2002 and references cited there). In contrast, the past perfect allows specification of this sort, even ambiguously:

(12) She had eaten breakfast at 9.
  a. = the eating happened at 9
  b. = the eating happened before 9

The reason why this is the case is that the reference time R is a variable. In the past perfect, it is moved form the speech time into the past, like a slide rule or a movie camera, and it can be moved variably far into the past, either all the way back to the event time or to some time point between the event time and the speech time. This leads to temporal ambiguity in the past perfect, as opposed to the present perfect, where the reference time is kept constant, R = S (adding a second reference time, like 'at 9', thus being either tautological or contradictory).

The Icelandic PROGRESSIVE is expressed with temporal auxiliaries + the infinitive marker *að* and an infinitive. Since infinitives express a present/future relation between E and R (cf. (6c)), the three progressive tenses, exemplified in (13), have the readings in (14):

(13) a. Hún var að mála.
  she was to paint ≈ 'She was painting.'
  b. Hún er að mála.
  she is to paint ≈ 'She is painting.'
  c. Hún verður að mála.
  she will-be to paint ≈ 'She will be painting.'[10]

(14)	Non-finite	Finite	*Construction*	*English glosses*
a.	(E ≤ R)	> S	**progressive**, past	she was **to paint**

[9] The temporal auxiliaries *be* and *have* are arguably tenseless themselves (the tense semantics of clauses containing them stemming from other elements, either the setting of the finite T or non-finite verb forms).

[10] The sentence in (13c) may also have the modal reading 'She must paint', but that reading is irrelevant here. The pure future reading can also be expressed with the complex auxiliary *koma til með að*, lit. 'come forward with to', simply meaning 'will'.

b.	(E ≤ R)	=	S	**progressive**, present	she is **to paint**
c.	(E ≤ R)	<	S	**progressive**, future	she will be **to paint**

The English progressive differs from the Icelandic one in being expressed with the gerund, which has a simultaneous reading (E = R), rather than expressing a present/future relation (E ≤ R). Thus there is no real *temporal* distinction between the progressive tenses and the simple tenses in English, English using the progressive to express the simple tense relations even more commonly than Icelandic does (where this is also possible, and is currently spreading, due to the ambiguity of (E ≤ R), which means both 'future' (E < R) and 'present' (E = R)). We will not study this further here, though.

As discussed by Cinque (1999:82, cf. Vikner 1985), a clause may contain two reference times, R_1 and R_2. Adopting Cinque's Generalization, cited at the beginning of this paper, we assume that both are generally present although only one of them is commonly active. Exceptionally, both are active, as in the Icelandic *impersonal past passive progressive* in (15):

(15) Það var verið að mála húsið mitt.
it_{EXPL} was been to paint house.the my
'My house was being painted.'

Compare the Icelandic temporal structure and the temporal structure of the English *past progressive passive* translation ('My house was being painted'), using only English glosses:

(16) a. *Icelandic*:

to paint	been	was	speaker NOW
E ≤	R_1 ≥	R_2 >	S
non-past	non-future	past	

b. *English*:

painted	being	was	speaker NOW
E ≥	R_1 =	R_2 >	S
non-future	unshifted	past	

Recall that the reference time is a variable, the reference time in the past perfect being moved variably far into the past from the speech time, like a slide rule or a movie camera. The same effect is grammaticalized by morphological past tense in past subjunctives in languages like Icelandic, such subjunctives not expressing past event time but present/future event time in relation to the past reference time set by a matrix predicate and morphologically copied by

the subordinate subjunctive verb (for details, see Sigurðsson 1990, 2010a, cf. also Giorgi and Pianese 1997).

Being grammaticalized and lexically expressed to a considerable degree, the logical / semantic notions E, R and S seem to reflect syntactic categories: Speech tense, T_S, and event tense, T_E, in addition to the generally assumed finite T(ense), which corresponds closely to R (T_R). That is, a finite clause has, roughly, the tense structure in (17):

(17) $[_{CP}$ ... T_S ... $[_{IP}$ ... T_R ... $[_{vP}$ … T_E ...]]

One might be tempted to replace the labels CP, IP, and vP with T_SP, T_RP, and T_EP, but we will not pursue that possibility here. Arguably, the Fin category in (4) above and in the system proposed in Rizzi (1997), splits into T_S and speech location (the speaker NOW and HERE, cf. Sigurðsson 2004, 2010b).

In languages like Icelandic and English, T_S itself is invisible (except, perhaps, as a complementizer in subordinate clauses or indirectly, as verb-second, in main clauses), whereas the values of T_E, as –PAST or –FUTURE, are commonly represented by infinitival and past participle suffixes, respectively. In the relatively rare cases of two or more active reference times, as in (16), the extra participial and/or infinitival/gerund forms suggest that additional T_R heads are available in syntax, much as argued by Vikner (1985) and Cinque (1999), and also by e.g. Julien (2001).[11]

We conclude that grammatical Tense is not a syntactic category or feature but a morphological category that reflects combinations of 'atomic' syntactic relations. Basically, grammatical Tense (T_R) interprets event time, T_E, in relation to speech time, T_S, much as grammatical Person (Pn) relates event participants (NPs) to speech participants, Λ_A and Λ_P. On this approach, thus, CP structure contains the following elements (among others, not indicated):[12]

(18) $[_{CP}$ .. Force .. Top .. Λ_A .. Λ_P .. T_S .. $[_{IP}$ .. Pn .. Nr .. T_R .. $[_{vP}$ .. T_E .. $NP_{\alpha Phi}$ ..]]]

Like the speech participant features, then, T_S is a head that is as a rule silent, but syntactically active, by entering an Agree relation with an IP internal category (commonly, but not always, without concomitant movement). In addition, T_E is commonly invisible (when non-distinct from T_R).

[11] In addition, it may be necessary to distinguish between different T_E heads, as suggested by Cinque (1999:83ff) and Julien (2001), but we will not explore that possibility here.

[12] We do not wish to make any more specific claims about the location of individual features of the CP domain. Being silent, they cannot in fact be exactly located 'in space', thus being like quarks. We will not discuss this important issue any further here.

4. Conclusion

Notions like ‘past tense’ and ‘1 person’ do not really have any meaning–that is, they are uninterpretable at the semantic interface and thus *cannot* be syntactic features given basic minimalist assumptions. Transfer, handing over the syntactic message to the interfaces, cannot hand over features that the interfaces cannot ‘interpret’ or operate with (much as aeroplane parts cannot successfully be put on the production line in a car factory). Rather, grammatical values like ‘past tense’ and ‘1 person’ are assigned in morphology. While these values are invisible to the semantic interface (being assigned post-syntactically), the underlying syntactic relations are legible to both the interfaces, yielding semantic interpretations like ‘before the speech time’ and ‘identical with the speaker’ and morphological/PF representations like ‘past’ and ‘1 person’. The underlying matching relations thus yield lexical and grammatical PF representations and are thereby evidently syntactic and not ‘pragmatic’ as sometimes assumed or even argued.

Given the hypothesis that syntax mediates between meaning and form, by ‘feeding’ both the interfaces, it is reasonable to assume that universal syntactic features have *both* semantic and perceptible effects or exponents in at least some languages. The logophoric speaker/hearer features, Λ_A and Λ_P, and T_S and T_E are features of this sort.

In conclusion, the negative evidence of grammatical silence is weak or nil, and the positive evidence of overt grammatical marking is only indirect.

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