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# Language is for thought and communication

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There is an ancient debate about whether language is an instrument for thought or for communication. I argue that the distinction is misleading, and that language is an integral part of both, human-specific thought, and communication. The argument is based on the growing consensus that grammatical knowledge – a hallmark of human language – encompasses not only the propositional content of an utterance but also its communicative content. If communicative content is regulated by grammatical knowledge, then it follows that communication is as much a function of language as thought is.

## 1. What is language for?

The kinds of thoughts humans have distinguish us from animals and so does the way we communicate them, namely via language. Language allows us to access the mental worlds of others and to synchronize them thereby establishing common ground. The relation between thought and language has been explored since ancient times and so has the relation between language and communication. It is typically assumed that it is either thought or communication which is the primary purpose of language. For example, Chomsky (2017: 298) claims that "*the modern doctrine that communication is somehow the "function" of language is mistaken… Language is fundamentally a system of thought*."

The language-is-for-thought view, which pervades the contemporary generative tradition, contrasts with the alternative view according to which *"language arose primarily in the interests of enhancing communication, and only secondarily in the interests of enhancing thought."* Jackendoff (2002: 123). The language-is-for-communication view is widespread within cognitive science (Carruthers 2002) as well as within functionally oriented approaches towards language including those that take a clear interactionalist stance (Levinson 2019). This defines two opposing views on language summarized in (1).

(1)

| Function of Language | Function of Language |
|---|---|
| \| | \| |
| Thought | Communication |

Discussions surrounding the function of language often take an evolutionary perspective: that language is a system for communication is taken to imply that language evolved *for* communication. Of course, it is undeniable that language is used in communication, but this may be merely an exaptation rather than its essential function (Gould & Vrba 1982). Crucially, the question regarding the function of language has synchronic relevance as well: its answer will influence how we model language within a general theory of cognition.

The goal of this squib is twofold: first, I will add arguments to the emerging consensus that interactional aspects of language are grammatically configured, just as propositional aspects are. Second, I present a novel conclusion that bears on the ancient question regarding the function of language introduced above: if indeed grammatical knowledge, which defines human language, equally configures (the language of) thought as well as (the language of) interaction it follows that human-specific language must be a vehicle for both thought and communication and hence the dichotomy dissolves. And if this is the case, we need a model of language that does justice to the intrinsic duality of language, and which incorporates both thought and interaction rather than taking one as derivative from the other. Since the point I wish to make straddles across frameworks which make radically different assumptions about the nature of language and grammar, it is crucial to define grammar in a way that is not tied to a particular framework.

## 2. What is grammar?

As a starting point, I take it to be uncontroversial that one of the key characteristics of all human languages is that there is a grammar that constrains the way sentences are configured. While the extent to which such constraints are universal is a matter of much debate within and across frameworks, there are aspects of grammar that are considered to be universally attested. Specifically, I assume the definition of grammar in (2), and I take it to be uncontroversial.

(2) Grammar $=_{\text{def}}$ an intrinsically structured system that mediates the relation between form and meaning of complex expressions

According to (2), the interpretation of a complex expression is not merely the sum of its parts but it is enriched by grammar.[1] For example, in English, the position of a nominal phrase determines (in part) its relation to the event encoded by the verb: in active clauses agents are realized as subjects and patients as objects, as in (3).

(3) a. The chameleon chased the butterfly.
b. The butterfly chased the chameleon.

Thus, with the same ingredients different thoughts can be expressed and this aspect of compositionality is one of the reasons for the creative aspect of language: we can make infinite use of finite means. This much is uncontroversial as it is an empirical fact: the meaning of individual parts of language is augmented via the way they are composed. This is the role of grammar: it regulates the composition of words and adds grammatical meaning. What exactly this system is, and how it relates to human cognition is not relevant; what is relevant is that it regulates every human language and that it is responsible for the following universal properties of human language.

i) *Structure dependence.* The composition of words into sentences is hierarchically organized. The rules of language are sensitive to this hierarchy: they are structure dependent (Chomsky 1980).

ii) *Contrast and paradigmaticity*. All domains of language are organized around contrast (Cowper & Hall 2014). This can lead to paradigmatic organization and the possibility for silence to be interpreted. It is via identifiable structural positions (grammar) that silence can become meaningful. For example, in English, plural number (4)b contrasts with singular number (4)a, but singular is not overtly marked. Crucially, the singular

[1] I assume the units of language that are combined to form complex expressions do not only include words and morphemes, but also intonational tunes, gestures, and facial expressions. They, too, play a role in the interpretation of complex expressions and they are systematically integrated just as the classic Saussurian signs are (see for example Esipova 2019, Ginzburg et al. 2020).

interpretation of an unmarked noun is only triggered in the context of a phrase and hence is due to grammar. Within a compound an unmarked noun is not interpreted as singular (4)c (Wiltschko 2008).

(4) a. one chameleon
b. two chameleon-**s**
c. chameleon skin

iii) *Multi-functionality*. Depending on its syntactic position a given word can acquire a different interpretation. For example, English, *have* can be used as a verb of possession or as an auxiliary. The very fact that such processes are sometimes analysed as *grammaticalization* indicates that they are viewed as deriving from the working of grammar (see Wiltschko 2014 for a synchronic view).

These properties can be considered the hallmark of grammar in the sense defined in (2). While grammar is typically considered to constrain language as used to express our thoughts (i.e., the content of our linguistic interaction, henceforth *propositional language*) I wish to show that it also constrains the language used to regulate the interaction itself (henceforth *interactional language*). In the following section, I briefly characterize these two notions.

## 3. What is interactional language?

Grammar is traditionally viewed as a system that regulates the composition of sentences, and these sentences are typically viewed in isolation, devoid of the interactional context in which they might appear. Crucially, however all languages have units of language that are restricted to language in interaction as they do not contribute to the content of the thought that is to be communicated but rather, they are used to regulate the communicative process itself: they regulate the establishment of common ground as well as turn-taking. While the main point of this squib is to show that both aspects of language are constrained by the same system (i.e., grammar), it is worth pointing out that there are also differences between propositional and interactional language. Here I introduce three such differences pertaining to lexical, morphological, and syntactic properties.

First, propositional language consists of words and morphemes that come in two broad classes: open class (lexical) categories and closed class (functional) categories. Now, there are units of language that belong to interactional language only, like for example response markers *yeah* or confirmationals *eh?*. Crucially, these forms differ from both lexical and functional categories: they are neither fully open class, nor are they fully closed class like, for example, complementizers or tense-markers. Speakers regularly come up with new ones or recruit existing words that belong to propositional language (e.g., *right* used as a confirmational).

Second, a pervasive property of propositional language is that much of its functional domain is characterized by grammatical phi-features (person, number, and gender) and these features define morphological paradigms (e.g., in pronominal systems or verbal inflection). While paradigmatic organization is also found in interactional language, it is not defined by phi-features. Rather interactional language can show paradigmatic organization defined by interactional properties, such as epistemic status of the propositional content or social relations among interlocutors (see section 4 for an example).

Finally, interactional language is characterized by differences in distributional patterns: it is typically found at the sentence peripheries (initial or final positions) and hence it takes scope over the propositional content. This distribution is expected if indeed the core function of interactional language is to regulate how the communicated propositional content is integrated into the knowledge states of the interlocutors and how the utterance as a whole is integrated into the sequence of interactional turns. This type of content differs significantly from content that contributes to the composition of the propositional content itself.

In sum, there are several properties that define aspects of language which serve to regulate the linguistic interaction rather than to compose the content of interaction. In traditional grammatical treatments, these aspects have not been considered to be in the purview of grammar. While my core argument – that language is an instrument for both thought and communication – is based on the observation that grammar regulates both propositional and interactional language, I nevertheless continue to distinguish between these two aspects of language, and I do so for two reasons. First, it is a way to acknowledge that there is an aspect of language which has long been excluded from grammatical analysis, namely forms of language used to regulating linguistic interaction. Second, the differences between propositional and interactional language reviewed above are still consistent with the main claim that they are regulated by the same grammar. That is, propositional domains of language, too, differ from each other in systematic ways: for example, lexical categories have lexical, morphological, and syntactic properties that differ from functional categories, yet they are both regulated by grammar. In the next subsection, I show that interactional language, too, is regulated by grammar.

## 4. Grammar constrains interactional language

The argument that language in interaction is constrained by grammar is not new. Ginzburg & Poesio (2016) show that aspects of language in interaction are as much rule governed as those conventionally viewed as being part of grammar, including disfluencies, interjections, overlapping turns and online repair. This calls into question the generative division between competence and performance (cf. also Ginzburg & Poesio 2016; Kempson et al. 2016) and echoes insights from conversation analysis (Sacks et al. 1974) and interactional linguistics (Selting & Couper-Kuhlen 2000; Couper-Kuhlen & Selting 2001) according to which a speaker's knowledge

of how to have conversations is part of competence (Campbell & Wales 1970; Hymes 1972; Keenan (Ochs) 1974).

Within the generative tradition, too, aspects of language that are restricted to interaction have been analysed as being constrained by grammar. According to Ross' (1970), the illocutionary force of an utterance is directly encoded via a (covert) superordinate structure (*I tell you that)*. Ross' insight to syntacticize speech acts has been taken up again over the past 20 years with different implementations. On current views, speech acts are not primitives but are decomposable. Crucially, it became possible to analyse elements of language that do not contribute to propositional content, but which regulate the use of language, including particles expressing the speaker's attitude towards the truth-conditional content of the utterance. Other use-conditional elements include intonational tunes used to call on the addressee for a response (Beyssade & Marandin 2006) as well as vocatives and attention getting particles. They regulate turn taking. These are all aspects of language which are only found in linguistic interaction and there is growing consensus that these aspects of language are part of syntactic structure (Speas & Tenny 2003; Hill 2007; 2013; Krifka 2013; Haegeman 2014; Miyagawa 2022; Corr 2022; a.o.). If so, then interactional aspects of language are regulated by grammar and we predict them to display the hallmarks of grammar, defined in section 2. In this section, I show that this is the case.

First, consider the defining property of grammar: it mediates between form and meaning such that the meaning of a complex expression is more than the sum of its parts; it is enriched with meaning that derives from grammatical structure. This is true for interactional language as well. For example, in (5)a *Charlie* is used as the subject of the proposition. Adding *the chameleon* is optional and must be interpreted as a parenthetical. In (5)b/c *Charlie* is interpreted as a vocative, addressing the interlocutor, making it part of interactional language. Moreover, vocatives differ in their interactional role (Zwicky 1974). In (5)b, *Charlie* serves to catch the attention of the interlocutor; it can be preceded by an attention getting particle. In (5)c, it is used to establish a connection with the interlocutor in ongoing conversation; it can be preceded by the connector *but*.

(5) a. **Charlie** (, the chameleon) chased the butterfly.
b. (Hey) **Charlie**! *(The chameleon) chased the butterfly.
c. (But) **Charlie**, *(the chameleon) chased the butterfly.

In terms of their ingredients and linear order, the utterances in (5) are identical.[2] Thus, just as propositional language, interactional language, too, adheres to the generalization that interpretation is not merely dependent on the ingredients of the complex expression but that

[2] Their intonational patterns differ. An attention getting call can be an independent utterance realized as a separate intonation phrase whereas the other type of vocative is intonationally integrated into the utterance (Slocum 2016). While intonational integration *per se* cannot be considered a meaningful unit of language, it certainly has the appearance that it is, and this is because it is a reflex of structural composition. Since intonation interacts with grammar in predictable ways (e.g., Selkirk 1984) it reflects grammatical structure as well as the meaning conveyed by structure.

it is equally dependent on the way these ingredients are composed. This concerns not only the difference between propositional arguments and vocatives, but also the difference between the two types of vocatives. That grammar is involved in the latter distinction is supported by the fact that the two vocatives differ in distribution: attention getting calls are restricted to utterance-initial position, while the other type can be used sentence-initially (as in (5)c) but also sentence-finally, or -medially (Zwicky 1974), as in (6).

(6) a. The chameleon chased the butterfly, **Charlie**.
b. You should know **Charlie**, that the chameleon chased the butterfly.

The difference between propositional arguments and vocatives on the one hand, as well as the difference between the two types of vocatives on the other, can be attributed to grammar in the same way as the difference in interpretation among propositional arguments (as in examples (3)). If the distribution and interpretation of a given form is regulated by grammar, it follows that grammar is implicated in interactional language.

Next, I turn to structure-dependence. Interactional sentence-final particles used to request confirmation (*eh*) are restricted to root clauses, as in (7). *eh* is used to confirm the content of the matrix clause; it cannot confirm the content of the embedded clause, as in (8).

(7) That Milo has a dog (*__eh__) didn't surprise Anneke.

(8) Anneke knows that Milo has a dog, **eh**?
= Confirm that Anneke knows that Milo has a dog.
≠ Confirm that Anneke has a dog.

One might argue that sentence final-particles must take the entire utterance in their scope. Hence these examples would not indicate structure dependence. However, there are discourse markers that look strikingly like matrix clauses (e.g., *I guess*) but they are not in the scope of *eh*. In (9), *eh* is not used to confirm the speaker's guess but the content of the rest of the clause.

(9) Now, **I guess** you're here for news about your brother and the other boys, **eh**?
http://tvmegasite.net/transcripts/days/older/2005/trans-da-05-20-05.shtml

This means that *eh* must be sensitive to the structure of the utterance it combines with; it does not take the entire utterance in its scope.

Next, consider contrast and paradigmaticity. Atayal sentence-final particles enter paradigmatic contrast (as summarized in Table 1).[3] They are organized along two dimensions: whether the proposition is old or new information and whether this pertains to the speaker's or addressee's knowledge state.

[3] The Atayal data are from the C'uli' dialect in the Zhongxing Village, Tai'an Township, Miaoli County. They have been elicited from native speakers by Sihwei Chen (Academia Sinica) during fieldwork in 2016/17.

| | Speaker-oriented | Addressee-oriented |
|---|---|---|
| old | *hu* | *ra* |
| new | *pi* | *ki* |

**Table 1:** Atayal sentence final particles.

Illustrative examples are given in (10). *Hu* is used when the speaker believes the proposition (p) but wishes to confirm its truth (10)a; *pi* is used when the speaker does not (yet) believe p (it is news to them) (10)b; *ra* is used when the speaker thinks that the addressee believes p (10)c; and *ki* is used when the speaker thinks that the addressee does not yet know p (10)d.

(10) a. huzing = su kani, **hu**?
dog = 2SG.GEN this PRT
'This is your dog, right?'

b. huzing = su kani **pi**?
dog = 2SG.GEN this PRT
Comment: This means you doubt whether it's her dog.
Paraphrase: 'This is not your dog, right?'/'Is this really your dog?'

c. lay tax-an yiga' hani **ra?**
good watch-LV movie this PRT
'This was a good movie, eh?'

d. kyang huzing = mu la **ki**
exist dog = 1SG.GEN COS PRT
'I have a dog.'
Comment: People don't believe you have a dog, and you refute.

(Shiwei Chen, p.c.)

The interpretation of these particles relates the content of the utterance (p) to the interlocutors' knowledges states. As such they belong to interactional language. Nevertheless, they enter paradigmatic contrast, namely contrast defined by the interactional context.

If interactional language displays paradigmatic contrasts, we expect that there are silent but meaningful forms, one of the hallmarks of grammatical systems. This prediction is indeed borne out and I exemplify it based on Korean sentence-final complementizers. *Ko* signals that the utterance has been said by the speaker before (11)b, (12)b, while *y(a)* signals that it is based on hearsay (11)c, (12)c. Crucially, without an overt sentence-final complementizer the utterance has a specific meaning: it signals that it is uttered first-hand, as in (11)a and (12)a (Ceong 2019). It is not compatible with the hearsay or 'I already said it' interpretation. If utterances without complementizers were truly unmarked, they should be compatible with these interpretations as well.

(11) a. na, cha sa-ss-ta↓
1SG car buy-PAST-DECL
'I bought a car.'

b. cha sa-ss-ta-**ko**-↓
car buy-PAST-DECL-COMP
'(I SAID) I bought a car!'
Ceong (2019: 133 (129a/c))

c. cha sa-ss-ta-**y**
car buy-PAST-DECL-COMP-HEARSAY
'(I was told by someone that) I bought a car.' (H. Ceong, p.c.)

(12) a. swul sa-la↓
alcohol buy-IMP
'Buy a drink!'

b. swul sa-la-**ko**↓
alcohol buy-IMP-COMP
'I said you should buy a drink!'
Ceong (2019: 160 (158))

c. swul sa-la-**y**
alcohol buy-IMP-HEARSAY
'pro said you should buy a drink!' (H. Ceong, p.c.)

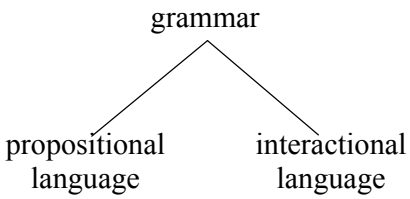
This pattern reveals the workings of grammar, which makes available a particular meaning without an overt form.

Finally, like propositional language, the language of interaction displays pervasive multi-functionality. I here exemplify this based on the English response marker *yeah*. In (13)a, *yeah* answers a polar question; in (13)b, it (re-)asserts the positive polarity of the preceding assertion. These two functions may be reduced to one (valuation of polarity), but all other examples differ. In (13)c, the initiating move (I) is an exclamation in the form of an interjection. *Yeah* indicates agreement with the initiator's assessment of the situation as remarkable. In (13)d, *yeah* co-occurs with the polar opposite response marker *no* but does not trigger a contradiction. It can be paraphrased as 'yes I know that you think so, but no I disagree'. Finally, in (13)e, *yeah* serves as a sentence final request for response.

| | | | | | |
|---|---|---|---|---|---|
| (13) | a. | I: | Is it raining? | R: | yeah |
| | b. | I: | It is raining. | R: | yeah |
| | c. | I: | Wow! | R: | yeah |
| | d. | I: | You have to leave! | R: | yeah no I don't think so. |
| | e. | I: | It's raining, yeah? | | |

Thus, in addition to the polarity valuing function, response markers can indicate agreement and acknowledgment of the previous interlocutor's move (Wiltschko 2017; 2021). This can be analysed as deriving from grammatical functions that are available independent of the lexical material that manifest them. If these functions were purely a matter of lexical entries, one would have to postulate a series of lexical entries. If we assume that they are embedded in a grammatical system that provides these functions, multi-functionality follows. Moreover, Wiltschko (2021) shows that confirmationals and response markers display the same patterns of multi-functionality, suggesting that they are regulated by the same system: the grammar of interactional language, which in turn follows the same logic as the grammar of propositional language. We can thus conclude that grammar, as defined in (2), constrains both propositional and interactional language, as illustrated in (14).

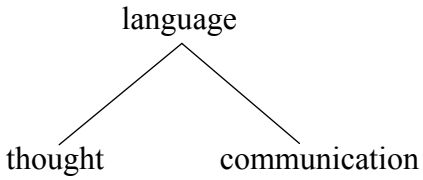
(14)




## 5. Lessons from language in interaction

What do the facts reported above tell us about the question regarding the function of language? Given that grammar constrains both propositional and interactional language, we may conclude that the function of language encompasses both thought and communication, as in (15).

(15)




This implies that we need a comprehensive model of language which incorporates both thought and interaction. To discuss the implications of this conclusion, I choose two positions on opposite ends of the spectrum relative to the question regarding the relation between language, thought, and communication: Chomksy's Minimalist Program and Levinson's Interaction Engine Hypothesis.

### 5.1. If language is an instrument for thought, how does communication fit it?

Current minimalism (along with the biolinguistic enterprise) is a representative of the position that language is a system for thought (Reboul 2015; Asoulin 2016; Chomsky 2017). This assumption characterizes its stance on the evolution of language but is also reflected in the way

the language faculty is modeled in relation to other cognitive functions. The claim is that the language faculty consists of Universal Grammar, a human capacity which makes it possible to acquire and use language; it determines the generative mechanisms and the basic elements that enter linguistic computation. This mechanism consists of *merge*, which is responsible for discrete infinity and recursion and hence captures the Humboldtian dictum that language uses finite means for infinite expressivity. The output of the generative procedure is interpreted by two language external systems: the conceptual-intentional system – a system of thought – and the sensorimotor system responsible for the production and comprehension of language (speech). Thus, the language faculty computes elements of language to form structured expressions which are externalized to be pronounced, as in **Figure 1**.

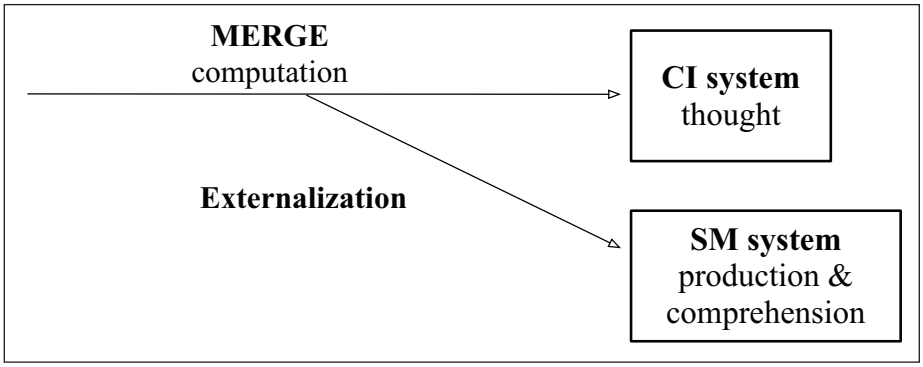



**Figure 1:** The minimalist model of grammar.

The view that language evolved for thought is typically based on the argument that language is optimally evolved for computational efficiency (thus thought), but it is not an optimal system for communication (Asoulin 2016). According to Chomsky (2017), the opposing claim, namely that language is (evolved) for communication is based on the mistaken belief that language has continuously evolved from animal communication systems.

How does linguistic interaction fit into this model? The standard generative view is characterized by two assumptions: i) interaction is not considered part of the language faculty (e.g., competence) – it is a matter of performance. ii) communication is dependent on, if not equated with, externalization. Accordingly, thought belongs to computation, while communication would be a property of externalization.

There are (at least) two problems. First, interactional language has to be computed before externalization. This is evident from the fact it displays the hallmarks of grammar, as shown in section 4. If interactional language were merely introduced during externalization, it would be a coincidence that it displays the grammatical properties it does.

Second, thought can be externalized without interaction, namely in the form of (overt) self-talk. One might argue that self-talk is interaction with oneself as in Plato's definition of *thought* as a "dialogue of the soul with itself". But there is linguistic evidence that self-talk can, but need not be, dialogical. As observed in Holmberg (2010), when people talk to themselves, they can do so either by using 1st or 2nd person pronouns:

(16) Self-talk:
  a. I am such an idiot.
  b. You are such an idiot.

The two forms of self-talk have different properties: interactional language is only available in *you*-centered self-talk (Ritter & Wiltschko to appear). For example, vocatives are ill-formed in *I*-centered but well-formed in *you*-centered self-talk, as in (17).

(17) Eliza to herself:
  a. *Eliza, I am such an idiot.
  b. Eliza, you are such an idiot.

*I*-centered self-talk is thinking out loud, rather than interacting with oneself. Hence, externalization is a necessary but not a sufficient condition for interaction. This means that linguistic interaction cannot be equated with externalization: thought can be externalized without interaction.

We can conclude that interactional language is regulated by the computational system just as propositional language is. But if so, then the claim that language is at its core a system for thought cannot be maintained. Its interactional function cannot be a by-product of externalization, it must be built into the computational system. This still leaves us with the question as to where the result of this computation is interpreted. Within the model sketched in **Figure 1**, one could assume that interactional language, like propositional language, is interpreted in the C-I system and perhaps that this system is responsible for interpreting propositional *and* interactional content. A second possibility would be to say that the computational system interfaces with a third system, namely the system of social interaction and this is where interactional language is computed (see Hinzen & Wiltschko 2022 for such a model).

## 5.2. If interaction motivates language, how does thought fit in?

In contrast to minimalism, interactionalist approaches take communication to be the core function of language. I take Levinson's (2019) Interaction Engine Hypothesis as representative for this approach; it explicitly spells out the view that interaction is what drives the development of language (both ontogenetically and phylogenetically), as in (18).

(18) interaction → language

Perhaps ironically, the arguments for this view mirror those for the language-is-for-thought view: there is evidence for the universality of interactive properties of language, including turn-taking properties (Levinson 2019) and other-repair strategies (Dingemanse et al. 2015). This universality might indicate the effect of optimal design, a set of "best solutions to recurrent problems in communication" (Levinson 2019: 193, cf. also Schegloff 2006). But Levinson also remarks that this explanation is not sufficient: our interactive abilities are based on pre-linguistic, innate cognitive abilities. Thus, the argument is that there is a pre-linguistic aspect of cognition which is fundamentally about social interaction, and it drives the development of language. On this view, the fact that interactional language plays a central role in human language is precisely what one expects; but what is not immediately predicted is that it shares grammatical properties with propositional language (the communicated content of thought).

We are equally left wondering why it is social interaction and not any other (pre-linguistic) aspect of cognition which might have driven the development of language. For example, perceptual categorization is a capacity that – like social interaction – is independent of language (i.e., pre-linguistic) but plays a crucial role in language, both in the expression of propositional and interactional content.

Moreover, the ancient question why humans are the only species that have developed a complex system like language remains unanswered. Since the cognitive capacity for social interaction pre-dates language and is found in animals as well, it is not clear why only humans did in fact develop language. It suggests that there is another cognitive factor that predisposes humans (but no other species) to develop language.

Finally, the Interaction Engine Hypothesis leaves open the question how and where thought enters language? That is, while a generativist stance leaves us wonder how communication enters language (and thought) the interactional stance leaves us wonder how thought enters language (and communication). There are two logical possibilities: thought may exist independently of language and our desire to communicate our thoughts leads to language as a means of expression, as in (19)a. Alternatively, the desire to interact may be independent of thought and the development of language goes hand in hand with the development of thought such that the two become indistinguishable, as in (19)b. On this view, early communicative content would not be thought-like (i.e., propositional) but, for example, emotional or purely interactional.

(19) a. thought → communication → language
b. communication → language = thought

The question whether (the evolution of) thought is dependent on language is an empirical one and subject to much debate. What I wish to contribute here is the thesis that language is best viewed as equally integrating both thought and communication. In other words, in humans, it is

language which mediates between thought and communication thereby giving both its human-specific characteristics: both the logic of linguistic interaction (interactional language) and the logic of linguistic content (propositional language) are constrained by the same system.

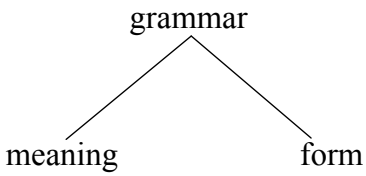
## 6. Conclusion

The main empirical point of this squib is to contribute new evidence for the assumption that both interactional language and propositional language share the hallmarks of grammar. This means that interactional language cannot be relegated to being a performance phenomenon (contra the core generative stance). At the same time, the fact that the same grammatical system regulates both the expression of thought, and its communication suggests that it is equally shaped by both rather than being merely driven by the demands of interaction (contra the interactionalist stance). Language is a system that equally incorporates thought and communication and arguably contributes to the fact that both take on their human-specific characteristics. This conclusion has implications for our modelling the interaction between language and other cognitive capacities, and these implications take on a different shape for generativists and for interactionalists: generativists have to acknowledge that language (and thought) interface with social interaction while interactionalists have to acknowledge that language (and communication) interface with thought. Thus, the relevant question is not whether language is for thought or for communication but instead we should ask why and how language has both these functions. There is a human-specific capacity that we can characterize as grammatical knowledge: it regulates thought and interaction and gives both its human-specific traits.

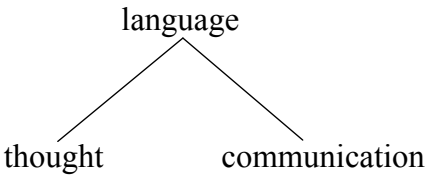
From a synchronic perspective, this means that we need a model of language that incorporates both thought and interaction. Most current models focus either on the role of language for thought or on the role of language for communication. And this focus determines not only its theoretical assumptions, but also the empirical domains and methodologies (Dingemanse 2017). If indeed both functions are equally important, then we need to incorporate findings across frameworks.

From an evolutionary perspective there is at least one thing we can conclude. It may be useful to explore the potential role of co-evolution. That is, there appears to be a system in place (call it grammar), which has made it possible for thought and for social interaction to (co-)evolve in human-specific ways. If so, there may be other faculties which have co-evolved as a function of this system – music and emotion are possible candidates. While this does not solve the problem as to how this system (grammar) evolved in the first place, it provides a new point of view from which to explore this question. Thus, I suggest that just like grammar mediates between form and meaning, as in (20)a, language mediates between thought and communication, as in (20)b.

(20) a.




b.




On this view language determines not only the relation between two core aspects of human cognition (thought and communication) but it also influences the specific shape each of them takes. This way of viewing language opens novel ways of exploring the relation between language, thought, and communication. But it still leaves unanswered the eternal question as to what makes language possible. Did it arise suddenly and virtually out of nowhere, as in Chomsky's (2010) Prometheus story, or did it evolve from yet another cognitive capacity that interacts with both social interaction and thought? A plausible candidate for such a system might be our narrative capacity, another human specific trait (Thompson 2010).[4]

[4] An anonymous reviewer points out that I take a stance according to which humans are unique in the animal kingdom in possessing language and they characterize this view as supremacist speciesm. While I admit that I do think that language is a uniquely human trait, I do not think that this leads to the conclusion that humans are – for this reason – superior to other animals. In fact, the ability for language and all that comes with it is arguably responsible for the way humans have created the world as it currently presents itself. I would not call the ability to destroy the world a sign of superiority.

## Abbreviations

COMP = complementizer; COS = change of state; DECL = declarative; GEN = genitive; HEARSAY = hearsay evidentiality; IMP = imperative; LV = locative voice; PST = past; PRT = particle; SG = singular

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## Competing interests

The author has no competing interests to declare.

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