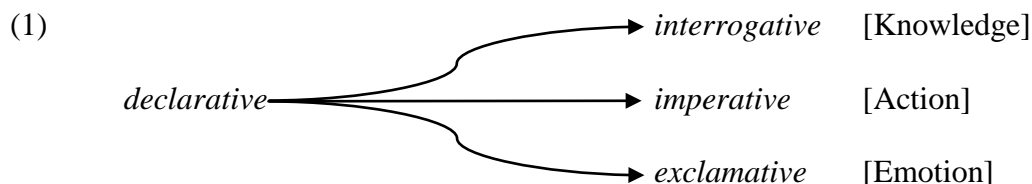# Relating Inventories of Sentence Types and Speech Acts: A Look at Cognitive Approaches

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[Intro]. We analyze approaches to accounting for the inventory of natural language sentence types (STs) as established in research on typology and formal morphosyntax in terms of inventories of illocution types (ITs). On the form side we take Sadock & Zwicky (1985) to be essentially correct in identifying three *bone fide* major STs (*declaratives*, *interrogatives, imperatives*). All others (*exclamatives*, *optatives* etc.) count as minor (perhaps ranked according to frequency of occurrence). On the function side, we assume familiarity with the controversies around the proposals by Searle (1976) and Zaefferer (2001). Searle's direction-of-fit-based approach links the major STs to "unidirectional" values (*dec* > word-to-world; *int, imp* > world-to-word). Its well-known main weaknesses concern *interrogatives*: Neither are they properly separated from *imperatives*, nor is their close affinity to *declaratives* captured. Also, Searle predicts a prominent minor ST counterpart of the COMMISSIVE IT in spite of such STs being unattested (but see Pak, Portner and Zanuttini 2008). In Zaefferer's attitude-based illocutionary semantics, the major STs correspond to (telic) volitional ITs (ASSERTIVE, EROTETIC, DIRECTIVE) (as opposed to the atelic EXPRESSIVES) (cf. Zaefferer 2007). *Declaratives* and *interrogatives* are taken to form a "natural" subclass of [+epistemic] information-oriented types (as opposed to [−epistemic] action-oriented types corresponding to *imperatives*). One shortcoming of this approach lies in its strong (perlocution-enriched) analysis of assertion as *WANT(S, BELIEVE(H,p))*, which has been shown to lead to contradictions (Searle 2001) and whose repairs (Zaefferer 2006) threaten to abandon the *dec/int*-distinction (Gärtner 2012).

[Aims]. In this talk, we critically assess cognitive approaches to the ST-IT-nexus, with part [A] focusing on conceptualizations of the problem and part [B] scrutinizing experimental approaches. Part [C] provides an outlook. Our overall aim is to inspire discussion, as we believe defending any particularly strong fixed view on the subject matter would be premature.

[A]. Although appeal to cognition was made, e.g., by Bach & Harnish (1984) in seeking to defend the "psychological reality" of their "Speech Act Schema," and by Sperber & Wilson (1986), whose inference-based critique of simplistic approaches to sentence moods was framed within a theory of "Communication and Cognition," it was Croft (1994) who made the first − and, to our knowledge only (substantial) − explicit cognition-based proposal for the ST-IT-nexus. Croft's idea is to seek explanatory grounding via "the common-sense model of belief-desire-intention psychology" (p.475) (for BDI-logics, see Rao & Georgeff 1998) for the schema in (1) (p.470):

(1)

                               → *interrogative*   [Knowledge]

       declarative————→ *imperative*   [Action]

                               → *exclamative*   [Emotion]

However, a closer look at the underlying model by Wellman (1990) reveals several mismatches. First, Wellman's analysis of "belief-desire reasoning" focuses on caused action, which, in "subjectivist" psychology, means action by the attitude holder. Thus, in place of other-directed *imperatives*, Croft would incorrectly predict (something like) *optatives* (or singular *exhortatives*) to constitute a major type (cf. appeal to "mind-to-world" direction of fit in the analysis of *optatives* by Searle and Vanderveken 1985:95). Second, "[t]he emotions expressed by expressive sentences tend to be evaluative rather than the emotion of desire focused on by belief-desire-intention psychology" (Croft 1994:473). Thus, the category of

counter-expectation ("surprise"), most adequate for *exclamatives,* is situated elsewhere in Wellman's model, the closest counterpart for (volitional) desire once again being *optatives.*

From a linguistic perspective, granting default status to *declaratives* – although it fits well with their descriptive primacy as evidenced by performatives (cf. Lewis 1970: VIII) (cf. Panther and Köpcke 2008 on their "prototypicality") – creates a symmetry among the three remaining types that isn't warranted. Again, structural affinities of *dec/int*, e.g, concerning choice of markers of negation, are neglected and similar affinities are incorrectly predicted for *dec/imp*. Likewise, the often observed status of *exclamatives* as "derivative" of *int* or *dec* (cf. e.g., Rosengren 1994) isn't properly reflected.

As for predicting minor types, Croft (1994:470) suggests that these can be found as intermediate categories along the three dimensions in (1) conceived of as "continua." In addition to an unsubstantiated claim about genuine continuity vs. discreteness, this raises two concerns: first, hybrid STs should not occur across dimensions, which is incorrect. *Wh*-exclamatives involving subject-auxiliary inversion (*How cool is that!?*) mix *int/exc* properties (Auer 2016). Second, specializations of *declaratives* are predicted to be found only along the three dimension, i.e., as initial steps toward *int*, *imp*, or *exc*. However, (reportive) *presentationals*, as can be found in Quechua (Faller 2002), arguably remain "neutral" in that respect.

[B]. A closer look at the more recent experimental literature shows that there tends to be a significant gap between what results have been gotten so far and what one would like to know to make explanatory progress on the ST-IT-nexus by appeal to cognition. Most relevantly, Egorova, Pulvermüller & Shtyrov (2014; 2013; 2016) provide ERP-, MEG-, and fMRI-based evidence for distinct neural signatures of the basic directions of fit. To bring such evidence to bear on deciding between Searle, Zaefferer, and Croft, in addition to testing *imp*-triggered DIRECTIVES and *dec*-triggered ASSERTIVES, a study of *interrogatives*/EROTETICS would (have) be(en) needed. Evidence for the "double complexity" of COMMISSIVES is arguably provided by self-paced reading and ERP-studies (Gísladóttir 2015), where pre-offers and rejections differ from answers in early processing, due to indirectness, and pre-offers differ from the other two in late processing, due to an additional forward-looking component. Together with the acquisition results by Bernicot & Laval (2004) – late acquisition of preparatory and sincerity conditions for promises –, this would confirm skepticism wrt treating COMMISSIVES as a primary IT category. Of course, an ST-independent study and/or a study of Korean *promissives* (Pak, Portner and Zanuttini 2008) would be needed to clarify this further.

[C]. Outlook. Three kinds of caveats need to be made. First, taking into account the social nature of speech acts must serve as a corrective to overly "subjectivist" conceptions of cognition. On the conceptual side, the analysis of the ASSERTIVE-EROTETIC "function space" by Levinson (2012), which a.o.t. builds in interpersonal "politeness"-related notions, may be taken as exemplary here. However, at this stage we lack further insight into (constraints on) the topology of such function spaces. Also, adopting an evolutionary game-theoretic perspective here (Franke 2012) may be called for in accounting for the establishment and long term stabilities of ST- and IT-inventories. Second, further exploration of the distinction between basic and evaluative "emotions" (mentioned in [B]) requires dealing with sub-sentential form types and thus a more elaborate model of ST-inventories (cf. the distinction between "structured" and "holistic" types by Zaefferer 2007). Third, "deflationary" or "minimalist" approaches to illocutionary categories and their link to STs (e.g., Portner 2004; Wilson and Sperber 1988) are a useful backdrop against which to assess cognitive approaches. In particular, studies on language acquisition and autism spectrum disorder presented by Kissine (2013: Chapter 5) to argue for diminished roles of inference and intention recognition are important here.

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