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# **Cognitive perspectives on English as a Lingua Franca**

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## **INTRODUCTION**

Although there is a formidable body of psycholinguistic work on the processing, representation, and development of English in learners and multilingual users, researchers have not been centrally concerned with the cognitive resources and processes underlying ELF. Several publications have addressed the cognitive dimensions of the phenomenon to a greater or lesser extent, but so far there has been almost no empirical research, and no assessment which distinguishes ELF from other non-native English speaker (NNES) contexts of usage. As well as reviewing relevant published studies, therefore, this chapter attempts to provide some foundations for a fuller cognitive account. It tries to isolate what I take to be the distinctive nature of the phenomenon, namely the processing of English in interactions between heterolinguals (people with different L1s). It also explores how models of mental representation, processing, and development can contribute to the broader goal of ELF research to problematize traditional monolithic views of English.

A cognitive account must start by acknowledging the enormous variation in the depth and breadth of L2 mental resources brought to ELF interaction, the extent to which users can control these resources automatically or deliberately, and the degree to which they converge with or diverge from those used by native English speakers (NESs). In the early days of ELF research, when the object of enquiry was understood by many to be an emerging global variety of English arising from sustained interaction between heterolingual NNESs, questions about how such a variety might be mentally represented and processed by fluent users would have been legitimate (although they were not posed). But it is now clear that ELF is more coherently conceptualized as a communicative mode or situation, rather than a linguistic system which may be

learned to different levels of individual proficiency (cf. e.g. Mortensen, 2013). Different kinds of NNEs will be more or less successful communicators in the ELF mode and, independently of this, their mental resources will align to different degrees with the norms of NES standardized varieties. NESs also participate in ELF interactions, and they too will bring variable resources to the communicative event, deploying these resources variably, with variable success. To further complicate matters, many ELF scholars and commentators (including almost all of those referred to in this chapter) continue to present ELF as a linguistic system, a kind of English, using terms like *ELF user/speaker* and contrasting it with English as a Native Language (ENL). This problem remains a serious obstacle for a cognitive account of ELF.

The chapter is divided into three main sections. The first discusses cognitive ontologies of English in the light of ELF research, exploring usage-based approaches and the role of usage norms. The second addresses how ELF-informed cognitive research can shed light on the assumed dichotomy, more broadly viewed, between native speakers (NSs) and non-native speakers (NNSs). The third deals with the nature of the mental resources used in ELF processing. The chapter ends with some general conclusions and suggestions for further research.

## **ELF AND COGNITIVE ONTOLOGIES OF ENGLISH**

By highlighting settings in which common norms cannot be guaranteed and are not under development at a community level, ELF studies have provoked a significant shift in scholarly thinking about NNS Englishes. Hitherto, the issue had been dominated by: (a) second language acquisition (SLA) research, assuming “Inner Circle” national standard varieties as learning targets; and (b) World Englishes studies, focused on emerging “Outer Circle” national varieties. In “Expanding Circle” contexts, where ELF prospers, English is more of an individual, cognitive phenomenon, playing little role in interaction between colingual community members (Schell, 2008). In such contexts, users develop similar idiolects not because of the population-level diachronic processes which lead to indigenized varieties, but as a result of individual cognitive processes of cross-linguistic influence from a common L1. Mauranen (2012, this

volume) calls these Englishes “similects” and characterizes the ELF mode as one of “second-order language contact,” in which users of different similects interact (2012, p. 29). ELF therefore exemplifies a cognitively marked phenomenon because it involves language processing in circumstances where the assumption of shared (or target) community norms cannot be taken for granted. In traditional cognitive ontologies of language, this assumption is the default (cf. e.g. Jackendoff, 2011: 587).

The family of theoretical approaches collectively called usage-based linguistics (UBL) has been recognized by several researchers as a particularly appropriate framework for addressing the cognitive dimensions of ELF (e.g. Mauranen, 2012; Alptekin, 2013; Mackenzie, 2014; Vetchinnikova, 2015), although ELF has not been discussed in the mainstream UBL literature. In UBL, language is conceptualized as a cognitive resource constructed and continuously developing on the basis of analyses of the frequency and distribution of form-meaning pairings in the input experienced during usage events (Langacker, 2000; Tomasello, 2003; Goldberg, 1995; Ellis, 2008). Systematic patterns of language are not determined “top-down,” as rules conforming to hard-wired universal principles, but rather emerge “bottom-up,” on the basis of variable, socially-contextualized, individual experience. Consistent with UBL, Complexity Theory provides a way of conceptualizing the constantly shifting and socially contingent nature of individual language knowledge deployed in ELF (cf. Larsen-Freeman, 2015; this volume). In the ontological framework developed by Hall (2013), these individual resources are conceived as part of polylingually constituted ‘I-registers’: mentally represented idiolectal knowledge deployed in, and changed by, ELF and other usage modes. For an example of a usage-based characterization of part of an I-register used regularly in ELF mode, see Hall et al. (2016).

But most UBL accounts of English do not provide an exact fit for ELF. Usage-based linguists generally assume a supra-mental ontological category of language which holds at the community level, and in fact most work within the approach is concerned with group knowledge of national varieties (cf. Hilpert, 2014: 191-194). From the usage-based perspective of Cognitive Linguistics, for example, Langacker (2008)

specifies that "... a language is characterized as the set of internalized structures (conventional units) that enable its users to speak and understand" (p. 19), distinguishing between "what a single speaker knows and the collective knowledge of a whole society" (p. 30). Furthermore, "[a]n individual's notion of what an expression means [...] includes an assessment of its degree of conventionality in the speech community" (p. 30). In UBL, the individual (cognitive) view and the community (social) view of language are distinguished by the concepts of *entrenchment* and *conventionality*. Entrenchment is the process by which repeatedly encountered tokens of language input cause the associated neural event type to be stored and accessed as a unit in memory as "an established routine that can be carried out more or less automatically once it is initiated" (Langacker, 1987: 100). Contrasting with the individualized nature of entrenchment, "[c]onventionality implies that something is shared—and further, that it is recognized as being shared—by a substantial number of individuals" (p. 72). Croft (2000: 7) interprets this in terms of Clark's (1985) notion of *common ground*, which he takes as a mental construct. For some UBL scholars, the intersubjective role of conventionality in linguistic interaction can only be fully understood by looking beyond individual minds to *joint cognition* (cf. Harder, 2010; Verhagen, 2015: 239).

On a UBL account, then, ELF interaction may be interpreted as an exercise in joint cognition to which individual heterolingual participants bring repertoires of mentally-represented linguistic resources which they have constructed on the basis of prior experience (including L1 influence). Differing from the standard UBL view of interaction, however, the common ground assumed by ELF participants will include shared communicative principles but not predetermined linguistic norms. Yet patently ELF interactants assume that their linguistic resources will be sufficiently aligned for effective linguistic communication to result—in other words, they will assume they are all speaking a version of English. For some ELF scholars, what holds these Englishes together as a unified resource is not group conventions but the *virtual language*: "that resource for making meaning immanent in the language which simply has not hitherto been encoded" (Widdowson, 1997:138; cf. also Seidlhofer 2011: 109-120; Hülbauer,

2013). Seidlhofer and Widdowson define “the language” (“virtual English”) in terms of a set of abstract constitutive rules, which may be realized (encoded) variably, giving rise to systems which have regulative conventions, e.g. “Standard English” (SE), but also others which do not conform to such conventions, such as the Englishes involved in ELF interaction.

The precise ontological status of “virtual language” has not been spelled out in published treatments, and has been interpreted as an idealized monolithic system existing independently of users (Hall et al., 2015) and as completely incompatible with UBL (Vetchinnikova, 2015). Yet there are indications that Widdowson and Seidlhofer conceptualize it as mentally constituted and indeed consistent with UBL: Widdowson contends that “[“ELF users”] are performing on the basis of their knowledge/awareness of virtual rules which, as learners, they have somehow abstracted out of the actual language data they have been taught” (2010, personal communication; cf. also Seidlhofer, 2011: 120). On this view, English is understood not as the “conventional units” shared by its users, but rather the abstract rules they construct developmentally and employ to formulate utterances. NES production is normally constrained in usage by the particular regulative conventions of the communities to which they belong, but NNEs in ELF mode exercise greater freedom.

In order to be able to assess this issue more fully, we first address the fundamental question of whether—and if so to what extent—the acquisition, storage, and processing of English are intrinsically different for NESs and NNEs, in and out of ELF mode.

### **ELF AND COGNITIVE ASPECTS OF THE NS/NNS DICHOTOMY**

Neuropsychological accounts of the NS/NNS dichotomy formulated by Ullman (cf. 2015) and Paradis (cf. 2009) have been applied to ELF directly by Alptekin (2011, 2013) and indirectly by Hall (2014; Hall and Wicaksono, 2013). In separate but essentially similar models, Ullman and Paradis contend that L2 users rely more on declarative memory systems than procedural memory systems for learning and using grammar.

Declarative memory is used to develop, process and store idiosyncratic information that cannot be predicted on the basis of patterns in sensory input (e.g. the arbitrariness of word forms). Much of this knowledge is explicit, in the sense that it is available to conscious awareness and may be intentionally (deliberately) learned. Procedural knowledge is used for skills involving the sequencing and categorization of information. It is acquired implicitly (i.e. without awareness or intention), and gradually becomes automatized through extended practice (“entrenched” in UBL). Procedural memory systems control L1 grammar, including syntactic, morphological, and phonological regularities. The two types of memory are claimed to be physically instantiated in distinct neuroanatomical structures (although see Cabeza and Moscovitch, 2013). According to Ullman, declarative memory systems are recruited for semantic and lexical learning in both L1 and L2. For grammar, however, there are differences related to age of acquisition and exposure: pre-adolescent learners of L1 and L2 rely on procedural memory, but adult L2 learners depend on declarative memory, at least at early stages and in the absence of rich and prolonged experience with the language. Ullman suggests that in addition to maturational constraints, this has to do with the learning contexts typical of adult L2: instructed learning being less likely than uninstructed “immersion-like” learning to lead to “native-like” grammatical knowledge and processing, because the relative lack of opportunities for practice results in dependence on declarative knowledge (cf. DeKeyser, 2007).

Alptekin (2011) used this research to argue that the English knowledge of a “typical” ELF user” is fundamentally different from that of ENL users, because it “stem[s] from different cognitive resources and [is] the outcome of different cognitive processes” (p. 159). For him, most “ELF users” will have learned English using declarative memory systems as adolescents or adults, in instructional contexts, and so in post-instruction usage will rely on controlled lexical and semantic processing. He argued that there are two reasons why the forms used in ELF will differ from those used in ENL: first, “ELF users” cannot access their learned grammatical knowledge efficiently enough in online processing because it is not proceduralized, leading to the *omission* of forms which are obligatory in standardized versions of ENL; second, proceduralized knowledge from

their L1 might transfer to L2 production, leading to the *commission* of forms which do not occur in ENL grammars. Alptekin claimed (p. 160) that the evidence that NNES ELF interactants understand each other better than NESs do is consistent with this account, because the former have “identical cognitive resources and processes underlying output production”.

Unlike Alptekin, Hall and colleagues (Hall and Wicaksono, 2013; Hall, 2014) use the declarative/procedural distinction to emphasize the cognitive commonalities of NNS and NS knowledge types and processing modes. They contend that both NNESs and NESs can and do develop proceduralized knowledge of English, and that the Englishes developed in procedural memory will inevitably differ from the community norms of SE in both cases. In infancy, NSs develop implicit grammatical knowledge on the basis of the speech events they are exposed to and participate in, resulting in idiolects which conform to local community (often dialectal) norms. As a consequence of schooling and the development of literacy practices, they subsequently develop knowledge of SE through second dialect acquisition (Siegel, 2010). This knowledge will be variable across individuals (Dąbrowska, 2012) and for most NESs will initially be declarative, deployed using controlled processing. Depending on social experience, procedural control of SE norms will develop to different degrees. For NNESs, the sequence is reversed but the outcome is similar: learners are typically exposed to SE as the learning target, and they develop explicit knowledge of it initially in declarative memory systems. But their usage and experience of English both within and beyond instructional contexts will inevitably lead to parallel development of implicit knowledge in procedural memory systems (Ellis and Wulff, 2015: 86-7). The knowledge thus acquired will be influenced by the L1 system as well as the NNS Englishes to which the learner is exposed. For learners who go on to use English regularly in ELF contexts, procedural knowledge of English will become entrenched, and will become increasingly likely to diverge from SE norms.

Alptekin (2011) claimed that ELF and ENL (usage) are fundamentally different because, unlike NESs, NNES participants in ELF cannot recruit procedural memory systems for



the acquisition and processing of grammar. Yet neither Ullman nor Paradis discount the possibility that NNSs can develop proceduralized grammatical knowledge. In fact, there is a good deal of evidence to suggest that NNSs with high levels of proficiency process L2 grammatical structures essentially the same way as NSs (e.g. Clahsen and Felser, 2006; Kaan, 2014), using the same areas of the brain (e.g. Green, 2003; Abutalebi and Della Rosa, 2012). Hall (2014) contends that much of the evidence about “native-like” knowledge and processing in NNSs is actually moot, based as it is on the construct of proficiency, which is defined in SLA primarily, but uncritically, in terms of “accuracy”. The employment of accuracy-based measures of language use, such as error rates and grammaticality judgements, conflates “nativeness” (proceduralized grammatical processing) with conformity to exogenous norms like SE. Assuming a cognitive ontology of English consistent with UBL, the inclusion of “accuracy” as a criterion to measure knowledge of English is a category error.

#### **LANGUAGE RESOURCES AND LANGUAGE PROCESSING IN ELF**

Much of the published discussion of ELF processing concerns issues which are common to all L2 usage, whether with heterolinguals, colinguals, or monolinguals. It has tended to adopt the mainstream ontology of English as a set of “conventional units” which are not completely known by NNEs in the interaction. Mauraenen’s (2012) account, for example, characterizes ELF interaction between NNSs in terms of lack of entrenchment and limited automatization. Like Alptekin (2011), she contends that the less entrenched linguistic forms of “ELF users” will have “insufficient or partial” memory representations, compounded by “insufficient access routes to the target item”. This leads to “approximation”, the production of an item which “deviates from or falls short of the target [...]” (p. 42), understood as the conventional NES norm in SE. But the discussion in the two preceding sections suggests that the distinctive feature of ELF from a cognitive perspective is that NNEs who operate regularly in ELF mode will not assume predetermined shared norms. In much ELF performance, the NES target (if known and/or consciously valued), will not be relevant. ELF interactants will employ proceduralized linguistic resources which conform only partially with the conventions

of NESs (and of the similects used by their interlocutors). They engage successfully in joint cognition because of shared communication strategies, a collaborative disposition, and the deployment of linguistic resources shaped by similar Englishing experiences (possibly in the form of overlapping sets of abstract rules distilled from these experiences).

An issue which pertains specifically to ELF, then, is whether the absence of an assumption of shared norms leads NNEs in ELF mode to be more creative with their resources in production than they would be when interacting with NESs, where the pressure to align with “target” norms is higher. Data from corpus studies have been used to show that the ELF mode involves elevated levels of NNE creativity/innovation (e.g. Pitzl, 2012), though this has not been explicitly compared with non-ELF usage. The common occurrence of non-conventional, innovative forms, both morphological and syntactic, has been interpreted by Seidlhofer (2009) as evidence that processing in ELF operates according to Sinclair’s (1991) “open choice principle” (OCP), whereby utterances are assembled from atomic units by rule. Sinclair contrasts the OCP with the “idiom principle” (IP), according to which utterances are assembled from “semi-preconstructed phrases” (p. 110), i.e. multi-word expressions (MWEs) or formulaic language. This is consistent with Wray’s (2002) argument that adult L2 learners differ from NSs because they “will fall into the process of analysis” (p. 259), whereas the latter “start with big units and analyze them only as necessary” (p. 211). Wray and Grace (2007) relate the use of formulaic language (consistent with the IP) with *esoteric* (intra-group) communication, and suggest that more transparent language use (consistent with the OCP) evolves in situations of *exoteric* (inter-group) communication, including lingua franca usage (pp. 551, 555).

Conflicting with this position, a recent review of empirical studies of the online processing of MWEs in both L1 and L2 (Siyanova-Chanturia and Martinez, 2015) concludes that both NSs and proficient NNSs are sensitive to the frequency of MWEs and that this has an effect on the way they are processed and stored. The evidence reviewed suggests that NSs process frequent MWEs more quickly than novel control

strings, and are able to use their previous knowledge of them to better predict subsequent input. For NNSs, the evidence is restricted to comprehension, mostly of idioms with different degrees of compositionality, and almost uniquely with “proficient” users. But Siyanova-Chanturia et al. (2011) showed that lower proficiency NNSs had essentially the same reading speeds for frequent binomials (e.g. *bride and groom*) and their reversed novel versions (*groom and bride*), whereas NSs and higher proficiency NNSs were faster with the former than the latter. They take this as evidence for the UBL position on mental representation: that language knowledge, for both L1 and proficient L2 users, is stored in units that include but also regularly extend beyond the single lexical item, and furthermore, that the degree of entrenchment of these chunks, and consequently their availability for automatized use, is a function of their frequency in the input. Given that proficiency is in part a function of experience with the language, and experience determines subjective frequency counts, the conclusion that the IP operates in L2 processing seems more consistent with the psycholinguistic evidence (e.g. Kaan, 2014) than one in which lexical items can only be combined by grammatical rule (i.e. the OCP).

Studies of idiom use in ELF corpora (e.g. Pitzl, 2012; Franceschi, 2013) have yielded numerous examples of “approximation” to NES norms, and this has been taken as evidence by Seidlhofer (2009, 2011) and others for dependence on the OCP in ELF mode. Other ELF researchers, however, adopting a more explicitly cognitive perspective and taking into consideration also non-idiom MWEs, have questioned this argument (Mauranen, 2009, 2012; Carey, 2013; Vetchinnikova, 2015). They suggest that such examples do indeed reflect the IP in action, but that the MWEs are less entrenched in NNEs, and for this reason only approximate the target (NES) form. For example, Carey (2013) found that in academic ELF (both written and spoken), high frequency MWEs were used mostly conventionally, and indeed more frequently than in ENL, whereas those with lower frequency were more prone to approximation. Following Mauranen (2009), he concluded from this that “ELF users” store and retrieve the “functionally fixed” semantic chunks which underlie unstable lexico-grammatical forms. Mauranen (2012, 42-44) argues that in ELF interactions, approximated forms

will typically be processible for meaning by interlocutors on the basis of shallow or “fuzzy” processing driven by context and lexical knowledge rather than exhaustive parsing (cf. Clahsen and Felser, 2006), resulting in communicative success.

Vetchinnikova (2015) makes a similar argument on the basis of an examination of the language that participants in academic ELF experienced in the genre, as well as their own production. Her data suggest that these individuals build individual repertoires which include MWEs recycled from the input to which they have been exposed, but often in “approximate” form at the level of “unit of meaning”.

This evidence suggests that, consistent with the IP, NNEs who have considerable experience using English have access to stored MWEs or conceptual/semantic chunks when processing in ELF. Yet by demonstrating that the IP is operative at semantic or lexico-grammatical levels in ELF usage, one cannot conclude that the OCP is entirely inoperative. The process of approximation, for example, would seem to require constructional knowledge at some level of lexico-grammatical abstraction from the unanalyzed “target” form, whether a semantically-related item is substituted for a conventional one, or two conventional phrases are blended (Taylor, 2012). In other words, the processes can only occur if the user has analyzed the internal structure of a MWE to some extent.

UBL approaches provide a psycholinguistically plausible model of language knowledge that can account for the joint operation of the IP and OCP in processing. In Construction Grammar (Goldberg, 1995; Hilpert, 2014, ch. 6), for example, individual knowledge of language takes the form of an inventory of constructions (form-meaning mappings), which range along a continuum from single items like words (e.g. *view*), through semi-fixed expressions with variables (e.g. *in my N*, where N can be replaced with *view*, *opinion*, *perspective*, etc.), to completely abstract constructions (e.g. Prepositional Phrase). At the abstract end of the continuum, constructions resemble rules, in the sense of regularities which users extract from lexical material (cf. Culicover and Jackendoff, 2005: 39–40).

Here, perhaps, we have a cognitive interpretation of the notion of English as “virtual language”: a mental repertoire of possibilities for novel English constructions determined “bottom-up” by individual experience. On this interpretation, there will be as many “virtual Englishes” as there are users of English, the degree of variation between them constrained by (degrees of) mutual intelligibility, influence from other language knowledge (similects), and (conscious or unconscious) sensitivity to conventional norms. Given that processing in ELF mode is characterized by the absence of the assumption of predetermined community conventions, we cannot discount the possibility that some of the novel, creative, or unconventional forms found in transcripts of ELF interaction have been produced via processing according to the OCP, i.e. using the resources of the user’s “virtual English”.

## **CONCLUSIONS AND FUTURE RESEARCH**

This overview has concentrated on issues that have arisen in cognitively-oriented commentary on ELF, and has attempted to develop some foundations for a coherent cognitive account of the phenomenon. Two major controversies we have addressed are the extent to which ELF interaction relies on fundamentally different cognitive resources and processes compared with NES-NES interaction and the extent to which processing in ELF interaction relies on the IP as opposed to the OCP. With reference to the former, the evidence appears to suggest that the similarities are greater than the differences, and that the main difference stems from the absence of an assumption of predetermined norms. With reference to the latter, it would appear that, as in NES-NES interaction, both principles are in operation, although to different extents, depending on the degree of entrenchment and reliance on procedural memory that individual experience results in.

Several issues remain unaddressed. One is the presence of NESs in ELF interaction. There is a substantial body of research on the processing of NNS speech by NSs, much of it perpetuating the traditional monolithic view that NNS speech is inherently “defective” and therefore difficult to process (e.g. Millar, 2011). But there is no research, as far as I know, on processing by NESs who operate consistently, or very

frequently, in ELF mode (and little on intelligibility between NNES heterolinguals: cf. Pickering, 2006). Another issue that requires more attention is the role of cross-linguistic influence and language competition in processing in ELF mode. There is abundant evidence that bilinguals are able to operate in both monolingual and bilingual modes (Grosjean, 2012), and there is much discussion in recent ELF literature about the inherently bilingual nature of the phenomenon (Hülmbauer, 2013; Jenkins, 2015); but there has not yet been any discussion of (or empirical evidence concerning) the issue of whether ELF mode inevitably entails a bilingual processing mode. Related to this issue, there has been interesting psycholinguistic work on Slobin's (1996) notion of "thinking for speaking": the conceptual packaging, conditioned by linguistic experience (and therefore differing cross-linguistically), that a speaker carries out in order to formulate appropriate linguistic expressions. Slobin (p. 89 ff.) points out that "first-language thinking" might explain some "second-language speaking" patterns, and SLA research suggests this to be the case, but that "second-language thinking" can be developed (Stam, 2010). It would be interesting to explore whether expert NNESs are more likely to maintain "first-language thinking" in ELF mode than when interacting with NESs. Finally, there may be potential for cognitive work on social alignment in ELF (cf. Weatherholtz *et al.*, 2014).

The position I have adopted here suggests that for such research to be effectively pursued, there are some basic matters that still need to be resolved. One is the fundamental issue of what it is that scholars understand ELF to be. Persistent representation of ELF as though it were a linguistic system that has users (who can represent it mentally, process it, and dynamically modify it through usage) is an obstacle to a cognitive understanding of the phenomenon. A second problematic issue is the lingering influence of monolithic conceptualizations of English (Hall, 2013), where uncritical reference is made to "target" configurations (i.e. the forms of SE, which have no clear psycholinguistic status). A third obstacle is the broad focus that discussions of ELF processing adopt, where little attempt is made to distinguish between NNESs operating in ELF mode and interacting with NESs or colinguals.

Evidently, cognitively-oriented research on ELF has hardly begun.

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### **RELATED CHAPTERS**

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