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Kognitions- und neurowissenschaftliche Beiträge
zur natürlichen Sprachverarbeitung

Diversity in Cognition

Barbara Mertins /
Renate Delucchi Danhier
(eds.)

PETER LANG

This book encompasses a number of original studies on diversity in cognition. This topic is examined from a wide range of perspectives, including psycholinguistics, linguistic relativity, applied linguistics as well as second language and bilingualism research. The methodological approaches vary from linguistic descriptions and corpus analyses to experimental methods such as eye-tracking or speech elicitation. The book shows that diversity in cognition plays a key role in linguistics encoding, event conceptualization, reception of music and general literacy. Cognitive diversity can even be seen to shape human interaction and communication. The book offers new insights and fresh approaches to the discourse on diversity in and beyond cognition.

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Christopher J. Hall

English as a Lingua Franca as an expression of linguistic diversity: A cognitive perspective

Abstract: My focus here is English as a Lingua Franca (ELF), as a global manifestation of diverse Englishes and as an outcome of SLA. I first discuss defining features of ELF from a cognitive perspective, concluding that ELF mode is characterized by (a) heterolingual participants, (b) using English alongside other linguistic resources, (c) in the absence of (expectations of) shared norms. I call attention to the inherent diversity in ELF and propose a number of key dimensions along which the resources, processes, and outcomes of ELF usage can vary. This raises the issue of what, if anything, is *distinctively diverse* about ELF, compared with other domains of L2 English usage. I explore this question through the lens of the second language assessment framework of "CAF" (complexity, accuracy, and fluency). I argue that accuracy is neither a coherent nor a relevant dimension of ELF performance, and that it is here that the distinctive diversity of ELF resides. I move on to consider the potential contribution of psycholinguistics to a theoretical account of ELF diversity, concluding that although studies of structural priming are relevant, the prospects for a psycholinguistic account of ELF are limited. I argue that the theoretical framework of Usage-based Linguistics offers a better cognitive fit with ELF. Within this approach, I show how the phenomenon of ELF obliges us to reconfigure traditional ontologies of English in terms of the individual resources that diverse language users deploy in usage events. I conclude by highlighting implications for social justice and pedagogy.

Keywords: ELF (English as a Lingua Franca), CAF (complexity, accuracy, fluency), idiolect, Usage-based Linguistics, language ontology

1. Introduction

Linguistic diversity is the principal focus of sociolinguistics (*within* languages) and typological linguistics (*between* languages), but it has largely been glossed over or "abstracted out" in psycholinguistics and other cognitive approaches to language (cf. Hall 2018b). A major exception to this is developmental psycholinguistics, and particularly Second Language Acquisition (SLA). Several subfields of SLA are concerned centrally with diversity as a core feature of the developmental processes and outcomes involved (e.g. cross-linguistic influence, interlanguage, and individual learner differences). In line with this volume's aim to explore diversity and cognition through the lens of language, my focus here is English as a Lingua Franca, as a global manifestation of diverse Englishes and

as an outcome of SLA. My rationale is based on the following key observations. First, that internal linguistic diversity can shed as much light on human cognition as cross-linguistic comparison can. Second, that all languages exhibit great internal diversity. Third, that some languages are more internally diverse than others, with English more so than most. And fourth, that language contact, and therefore L2 learning and use, can be a major determinant of this diversity.

One measure of the inherent internal diversity of a language is the number of people who have acquired it in infancy. English, like Mandarin, Spanish, Bengali, and Hindi, has over 300 million native speakers. But perhaps more important than sheer size of the speech community is its geographical distribution. Unlike the other big languages, English is the native tongue of several large and many small national populations across the five major continents. Within and across these L1 groups, English varies according to the community using it, the context it is used in, and the purpose of its use. Moreover, its diversity inevitably increases through extended contact with speakers of other languages. The global distribution of L1 English through conquest and trade beginning in the early modern period resulted in language contact on an unprecedented scale, leading to even greater numbers of multilingual learners and users. Interaction between L1 and L2 users has reshaped the language many times over around the globe, to the extent that treating English as a single monolithic entity is no longer tenable for most academic and practical purposes.

The field of World Englishes (cf. Saraceni 2021) has explored the diversity of the language as a global phenomenon, especially in the many postcolonial settings in which, aside from the interpersonal, it also plays a significant role in political, economic, educational, and cultural affairs. Users in Kachru's postcolonial "Outer Circle" (Kachru 1985) have generally developed their knowledge of the language in what is called an "English as a Second Language" (ESL) context, where formal learning is accompanied and followed by regular experiences with the language outside the classroom. In some respects the ESL route to English resembles that taken by L2 learners situated within Kachru's "Inner Circle" of native anglophone contexts, although here they are less likely to have a common L1. A numerically much larger group develop the language in the "English as a Foreign Language" (EFL) contexts of Kachru's "Expanding Circle", where English does not figure so prominently in public life and learners tend to share the same L1. But however the language is learned, it is *used* globally, and one of the widest uses is in lingua franca communication, where L1 users are absent or in a minority (cf. Jenkins et al. 2018). Language knowledge and use in its multifarious manifestations is a prime example of unity and diversity in human cognition, involving the development, deployment, and dynamic restructuring

of millions of sets of complex mental resources. What does interaction in L2 Englishes tell us about these resources? Why does this matter? Yet mainstream understandings of language, both lay and professional, tend to deny or downplay linguistic diversity. English is viewed as a fixed, monolithic system, existing as an ideal abstraction, which can be taught and tested like other school subjects, and which L1 and L2 users alike generally fail to acquire correctly (Hall 2020). In this chapter, I explore the linguistic diversity of English as a Lingua Franca (ELF) from a cognitive perspective, with a view to ultimately challenging harmful monolithic beliefs about the language and its heterogeneous users.

The chapter is organized as follows. In Section 2, I discuss defining features of ELF from a cognitive perspective and conclude that ELF mode is characterized by (a) heterolingual participants, (b) using English alongside other linguistic resources, (c) in the absence of (expectations of) shared norms. In Section 3, I call attention to the inherent diversity in ELF and propose a number of key dimensions along which the resources, processes, and outcomes of ELF usage can vary. I conclude this section by raising the issue of what, if anything, is *distinctively diverse* about ELF, compared with other domains of L2 English usage. Section 4 explores this question through the lens of the second language assessment framework of "CAF" (complexity, accuracy, and fluency). I argue that accuracy is neither a coherent nor a relevant dimension of ELF performance, and that it is here that the distinctive diversity of ELF resides. Section 5 considers the potential contribution of psycholinguistics to a theoretical account of ELF diversity. I conclude that although studies of structural priming are relevant, the prospects for a psycholinguistic account of ELF are limited. In Section 6, I argue that the theoretical framework of Usage-Based Linguistics offers a better cognitive fit with ELF. Within this approach, I show in Section 7 how the phenomenon of ELF obliges us to reconfigure traditional ontologies of English in terms of the individual resources that diverse language users deploy in usage events. Section 8 concludes by highlighting implications for social justice and pedagogy.

2. Defining English as a Lingua Franca

Although a distinct scholarly field and paradigm named ELF has emerged this century, disseminating research in annual conferences, a journal, a handbook, several monographs and many edited volumes, the ontological status of the phenomenon has remained somewhat ambiguous (cf. Hall 2020). Most ELF researchers are (applied) sociolinguists, and in line with their principal disciplinary identity and epistemological commitments, they have adopted the

position that ELF is a communicative mode or setting, or a social practice, in which different L2 Englishes figure. For others, in contrast, ELF refers to the *form(s)* of English used by non-native speakers and writers when they interact with users who have a different L1. Whether more emphasis is placed on social practices or linguistic forms, however, it is use rather than user group which is the more central feature of ELF: although the linguistic identity of users is a fundamental element, they are only "ELF users" or "ELF speakers" in certain interactional contexts. This is not to say that some L2 users of English do not themselves identify as (predominantly) ELF users. As Ehrenreich (2018, p. 47) points out, "[f]or many speakers [ELF] clearly [...] serves a range of identificatory purposes in their global interactional spaces". But it is the interplay between interlocutors with different L1s in English-medium encounters which defines ELF as a communicative mode rather than a shared system or code. Accordingly, Seidlhofer (2011, p. 7) defines ELF as "any use of English among speakers of different first languages for whom English is the communicative medium of choice, and often the only option". The same speakers interacting in English with co-linguals or L1 users would not usually be taken to be engaging in ELF mode. Although it is not explicit in Seidlhofer's definition, it is assumed that L1 users of English, if involved at all, are not viewed as providing or modeling the linguistic norms for the interaction – hence the often reported sense of common identity between non-native speakers (NNSs) with different L1s in ELF encounters (cf. Baker 2015). But the commonality does not extend to the *forms* they use in these encounters – i.e. it is not seen as a uniform "international variety" of English. Even for scholars who implicitly present ELF as a resource rather than a mode of use, its formal diversity is a fundamental feature: for Cogo and House (2018, p. 210), for example, "ELF is an "open-source phenomenon", which is constantly adapted by its users and varies according to the context where it is used".

There has been little work on ELF which adopts or refers explicitly to cognitive models of language. Studies that do so have tended to concentrate on what are understood to be qualitative differences between L1 and L2 users. This has had the unfortunate consequence of perpetuating a view of "ELF users" as inherently less competent than L1 users, because of the distinct cognitive challenges they are assumed to have faced in the SLA process. For instance, Alptekin (2011, p. 159) argues that ELF performance is different from L1 English performance because it "stem[s] from different cognitive resources and [is] the outcome of different cognitive processes". And Mauranen contends that "[f]rom a cognitive point of view, we would expect ELF speakers to *approximate* English forms because this would allow them to attain reasonable economy in processing while securing a good chance of achieving comprehension" (2012, p. 57, my emphasis).

For Mauranen, approximations are forms which differ from Standard English, such as *categoration*, *discuss on*, *from other point of view*. They generally do not cause any communication breakdown, but are viewed as defective: expressions which "ELF speakers tend to get […] slightly wrong" (p. 144). Yet a definition of ELF as a cognitive phenomenon does not require reference to, or comparison with, L1 users. I have described ELF as "an exercise in joint cognition to which individual heterolingual participants bring repertoires of mentally-represented [English] linguistic resources which they have constructed on the basis of prior experience (including L1 influence)" (Hall 2018a, p. 76). This definition, to be elaborated further in what follows, recognizes that ELF is first and foremost a function of particular usage events, in which diverse L2 English resources are deployed and reshaped.

From a cognitive perspective, then, ELF involves the comprehension and production of utterances constructed from L2 English resources in heterolingual contexts. Based on this, the argument I wish to pursue here is that, crucially, the absence or decentring of L1 English users and usage in these contexts has the effect of compromising one of the central (psycho)linguistic principles of language knowledge and use: namely, the conventionality of the code (e.g. Clark 1996). According to Lewis (1969), conventions are coordination devices which emerge in a particular community to determine preferred outcomes in joint activities between members of the community. Clark (1996) applies this understanding of convention to language, defining separate languages as "signalling systems" of mappings between linguistic forms and meanings which constitute part of a community's "common ground" (Clark 1996, pp. 70–77). Knowledge and understanding of social conventions, including their applicability to all members of a community, emerge early. Rakoczy and Tomasello (2009), for example, demonstrate that children of around three years old not only follow linguistic conventions, but also adopt normative behaviors towards others who violate those conventions. Ambridge et al. (2012) review studies on how children "retreat from overgeneralization", i.e. start to conform to the often idiosyncratic conventions of the adult community system. Children acquiring English, for example, come to understand that even though the word *cooker* should mean "one who cooks" on the basis of the regular addition of the agentive suffix *-er* to verbs, for adult members of the community they grow up in it happens to refer to the appliance used for cooking. The authors conclude that underpinning the mechanisms which cause the retreat is a "necessary pre-condition that motivates children to respect adult conventions in the first place" (2012, p. 11). That precondition is attenuated in the use and ongoing development of English by participants in ELF interactions.

So, ELF contexts differ from native speaker (NS) ones because in the former the interactants do not belong to a single community and there is therefore no "assumption of predetermined community conventions" (Hall 2018a, p. 80). Yet like L1 users, L2 users in non-ELF contexts take for granted that communication will be governed by conventional forms, or *norms* to use the sociolinguistic term. In EFL and many ESL contexts, the norms are those of L1 users of standard varieties from the Inner Circle, but they equally might have arisen as "indiginized varieties" in the Outer Circle. Shared forms do not necessarily reflect conventional norms, however: interaction between L2 users from the same or similar L1 background may also conform to the non-conventional but shared regularities which arise from parallel learning trajectories modulated by common processes of cross-linguistic influence. Spanish L1 users of English, for example, will typically pronounce words like *stop* and *sleep* with an epenthetic initial [e], and omit pronominal subjects (e.g. "Is easy"), due to L1 influence. Mauranen has referred to such shared sets of L2 features as "similects" and has helpfully defined ELF as "second-order language contact" in which users of *different* English similects interact (2012, p. 29). The blurring of language boundaries within a single individual reflected in similects is a fundamental feature of bilingualism, of course. We know from studies of bilingual processing and mental representation that during monolingual performance in one language, be it L1 or L2, a speaker's other language is not completely supressed (Kroll et al. 2012). It is increasingly being recognized that typical language use by bi- and multilinguals taps into all a speaker's linguistic resources, regardless of socially constructed "named language" boundaries – in other words, the phenomenon of *translanguaging* (García & Li Wei 2014). Indeed, there is much discussion in the ELF literature about the inherently bilingual nature of the phenomenon (Jenkins 2015). We return to this issue in Section 7.

Figure 1 summarizes the typical characteristics of ELF which emerge from this initial discussion. The three characteristics each highlight an aspect of diversity: (a) ELF interactions feature participants who do not share a common L1; (b) ELF interactions feature the deployment of resources from multilingual repertoires; (c) ELF interactions unfold in the absence of an expectation of shared norms.

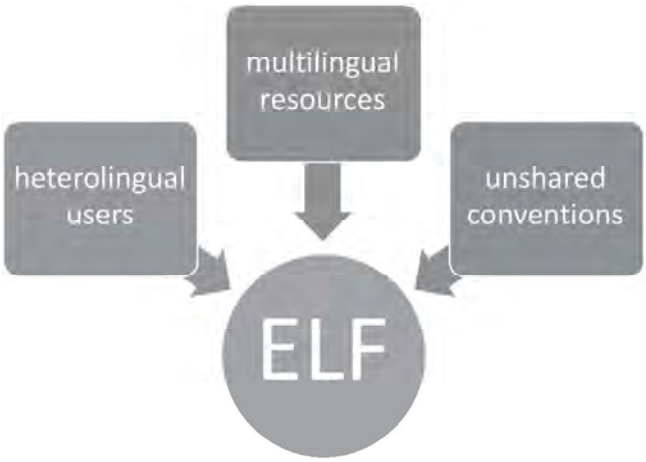

Figure 1: Typical characteristics of ELF from a cognitive perspective

These three characteristics do not exhaust the diversity found in ELF, however. The scope and extent of this diversity is the topic of the following section.

3. Dimensions of ELF diversity

ELF usage as defined in the foregoing admits huge intra- and inter-personal variation, which we can map along several continua, including the dimensions of diversity (henceforth "DD"s) listed in Table 1.

Table 1: Some dimensions of ELF diversity (DDs)

Dimension	From		To
(a) Lexico-grammatical complexity	Elaborate	↔	Simple
(b) Norm dependence	Localized, unstandardized, innovative, or idiosyncratic usage	↔	Inner Circle standard variety usage
(c) Translanguaging	Lots	↔	None at all
(d) Automaticity	Unconscious, rapid access	↔	Deliberate, labored search; or careful crafting
(e) Effective meaning-making/sharing	Full alignment	↔	Misalignment or breakdown

Consider, for example, the following scenarios (fictitious, but inspired by actual encounters that I have observed or that have been reported to me). In one, a L1 Kannada-speaking woman from Bangalore in India has traveled the 200 miles to Chennai to consult with L1 Tamil-speaking doctors in one of the specialist hospitals there. In another, a group of postgraduate students from several different countries are attending a research seminar in Luxembourg. In a third, elderly Japanese tourists ask a couple of kids selling beer on a Mexican beach about where they can try the best local fish. The Indian healthcare scenario is characterized by the use of highly localized Indian English accents (DD-b), with the doctor using quite elaborate vocabulary in complex sentences to which the patient responds with much simpler forms (DD-a). This contrast in English proficiency initially leads to mutual misunderstanding (DD-e). They proceed to draw on their shared knowledge of Hindi (DD-c), code-switching to compensate for the patient's effortful English (DD-d) and to facilitate mutual comprehension (DD-e again). At the Luxembourg seminar, the lecturer initially uses complex, carefully crafted English (DD-a and DD-d) following Inner Circle norms (DD-b), with no other languages involved (DD-c). The students engage their own Englishes to understand the talk with considerable ease (DD-e). Afterwards, lecturer and students shift to casual, unplanned, relatively simple English as they chat with each other on their way to get coffee (DD-a and DD-d). On the Mexican beach, the Japanese tourists use a limited English vocabulary with prominent Japanese phonetic features and little grammatical structure (DD-a and DD-b). They also switch frequently to Japanese and use gesture liberally (DD-c). Their search for English words is laborious, but the kids respond with effortless, quick-fire English (DD-d), most of it simple, pre-fabricated phrases and schemas (DD-a again), delivered in highly colloquial American English acquired from US visitors and popular culture (DD-b). The exchange is enjoyed by both parties, but ends with the tourists none the wiser about the local fish (DD-e). Note that these dimensions cover the resources (Englishes and others) that users bring to the usage event (DD-a, DD-b, DD-c), as well as the processes (DD-c, DD-d), and outcomes (DD-e) associated with it. Note too that often the same users can vary on different dimensions, depending on circumstances: the doctor can operate in monolingual or multilingual mode, for example, and the lecturer can carefully self-monitor or engage in spontaneous talk.

The diversity is immense, but all of this usage counts as ELF. This raises the question of what is *distinctively* diverse about ELF. All the dimensions of diversity we have considered so far are, for example, witnessed equally in EFL and ESL usage, where the typical characteristics of ELF are absent or infrequent. Consider, for example: a Kannada-L1 patient interacting in English with monolingual

English-L1 health workers in a UK hospital (a case of ESL); Spanish-L1 students at a postgraduate seminar in Spain where English is the medium of instruction (EFL); or young learners of English doing a tourist role-play activity at a high school in Japan (again, EFL). One can imagine such interactions being plotted anywhere along the five DDs listed in Table 1. Although much of the situation- and participant- dependent variation in our imagined ELF, EFL, and ESL scenarios is shared and can be accounted for from a sociolinguistic perspective, the distinctive interplay between the different DDs in ELF can only be isolated by adopting a cognitive vantage point. In the next section I demonstrate this by considering the distinction made in SLA between complexity, accuracy and fluency (CAF), and showing that "accuracy" is not a meaningful dimension for ELF.

4. ELF and CAF dimensions of L2 performance

Michel (2017, p. 50) provides a standard definition of CAF as dimensions of L2 performance:

> "Complexity refers to the size, elaborateness, richness, and diversity of the L2 performance. Accuracy is a measure for the target-like and error-free use of language. Fluency refers to the smooth, easy, and eloquent production of speech with limited numbers of pauses, hesitations, or reformulations". Following Housen and Kuiken (2009, p. 462), I take CAF as "principal epiphenomena of the psycholinguistic mechanisms and processes underlying the acquisition, representation and processing of L2 knowledge". Conceptualized thus, the "C" and "A" of CAF relate to the cognitive *resources* of English (mentally represented knowledge) and "F" to the *use* of those resources in interaction (processing).

What is perhaps most notable about the global population of L2 users of English is the diversity in breadth and depth of the *resources* they bring to usage events. Those with richer (more extensive and entrenched) resources will naturally be capable of greater complexity. As an epiphenomenon of acquisition and processing mechanisms as well as mentally represented knowledge, increased complexity will often be accompanied by increased fluency, as more constructions become entrenched and therefore proceduralized. From a usage-based perspective, both dimensions are associated with developing procedural knowledge (Ullman 2015) in a way that attention to accuracy is not. This is because, in parallel to and beyond the instructional and assessment contexts in which accuracy is a key goal, learning happens implicitly in usage events (Ellis 2005, 2017; Ellis & Wulff 2015). Learners are always also users, inevitably exposed to input from a diverse set of other users including co-lingual and

heterolingual peers, NNS and NS teachers, and people with unstandardized accents and dialects. The input can be experienced in a range of usage event genres, including transactional and interactional, formal and casual, written and spoken, online and face-to-face (cf. Thorne & Reinhardt 2008; Hellermann et al. 2019). A considerable amount of the input will contain NNS and unstandardized NS features (i.e. "errors"), and a subset of this will serve as intake, contributing to the learner's developing repertoire. These features will be reinforced through recycling in output and often also by the existing, highly entrenched, L1 system. In other words, some of the resources entrenched in procedural memory through frequent encounters in usage events will diverge from the norms of "accuracy" developed in declarative memory through instruction and deliberate learning. A key cognitive mechanism through which such repeated exposure and use can result in learning is long-term structural priming (cf. Jackson 2017), which we take up in section 5.

Although some in SLA argue that the "A" in CAF should be taken to include appropriateness and acceptability as well as accuracy (Housen et al. 2012, p. 4), success in learning English is still generally understood in terms of the extent to which NS grammatical norms are accurately reproduced (cf. "target-like" and "error-free" in Michel's [2017] definition). For example, in their influential review of studies on the effectiveness of L2 instruction, Norris and Ortega (2000) uncontroversially assume "target-like levels of ultimate attainment" (p. 419) as the instructional goal; there is no question that the learning target is defined by anything other than NS standardized norms. This is despite the very well-attested (and uncontested) fact that "accurate" use of many grammatical constructions is unnecessary for meaningful interaction, serving more as a NS social identity marker (Widdowson 1994). Take, for example, "incorrect" countable use of nouns like *advice* and *furniture* in EFL or ESL, a notable and widespread feature of NNS (including ELF) usage (Hall et al. 2013). Despite the prominent attention paid to "correct" application of countability in teaching materials, NNS pluralization of such nouns poses no obstacle to comprehension (Björkman 2008). Of course, some NNS usage can cause or contribute to communication breakdown; crucially, though, it is not its divergence from NS norms (i.e. accuracy) *per se* which causes the problems. Indeed, similar issues arise also within NS-NS interaction. I think we can conclude, therefore, that given that accuracy is a coherent and relevant dimension only in contexts where NS conventions are taken to be the yardstick, it is not relevant for ELF.

Let us now return to the role of fluency and complexity in ELF. Understood as ease of processing, fluency has not figured at all in the definition of ELF we have been contemplating thus far. SLA research (Skehan 1998) has demonstrated

how fluency and accuracy can be inversely correlated, such that an emphasis on accuracy in performance will often result in impaired fluency, and increased fluency will often incur a "cost" to accuracy (the so-called "trade-off hypothesis"). But when accuracy is understood as adherence to norms, and ELF is characterized by the unsettling of those norms, then the threat to fluency is diminished. This is because in ELF, meaningful interaction, not "correctness", is the goal. ELF scholars have tended to concentrate on participants in ELF interactions whose English resources are sufficiently entrenched to be accessible and usable fluently for effective/successful communication, e.g. in business (Nickerson 2005) and higher education (Jenkins 2014). They have observed how the prioritization of fluency over accuracy results in NNS forms, which can be viewed as innovations, i.e. expressions of creativity (Cogo & Dewey 2012). In ELF, complexity can thus involve diversity and richness of form and function which goes beyond the monolithic model taught and tested in the L2 classroom. If accuracy is removed from the equation, complexity can be developed and deployed with less attention to output (i.e. self-monitoring and self-correction). When ELF becomes the default mode of usage, as it is for increasing numbers of L2 users, this can result in the unfettered entrenchment, and fluent deployment, of NNS forms, because in such scenarios, NNS repertoires develop independently of NS norms.

The vantage point afforded by CAF thus helps us isolate the *distinctive diversity* of ELF: by exposing the inapplicability of "accuracy" as a relevant factor in typical ELF usage events, we can begin to see how the phenomenon is one which has become unmoored from the traditionally assumed tenets of linguistic communication, in which success is governed by an expectation of shared norms (Langacker 1987; Clark 1996; Croft 2000; Verhagen 2015). Once native speakers are decentred, and no other single community of users steps in to replace them as norm providers, then common ground regarding form-meaning mappings is reduced and diversity escalates. This loosening of the constraints of conventionality can result in increased linguistic creativity, but it also induces a need for heightened attention to pragmatic strategies and negotiation of meaning (Pitzl 2012; Cogo & House 2018). In sum, at the heart of the ELF phenomenon from the cognitive perspective is the interplay between distinct heterolingual individual language resources. These can reach high levels of complexity, may be fluently accessed and deployed, but are not necessarily shared. How to approach this distinctive ELF diversity from a theoretical perspective is the subject of the next section.

5. Theorizing distinctive ELF diversity

Accuracy as a construct relies on the idealization that languages are fixed codes shared by all (legitimate) members of a speech community, such that usage which diverges from the code is inaccurate (or "incorrect": Milroy & Milroy 2012, p. 30). Harris (1981, p. 10) has argued that mainstream linguistics distorts the reality of language use as a result of implicit subscription to a "fixed code fallacy", which he describes in the following terms:

> Individuals are able to exchange their thoughts by means of words because […] they have come to understand and to adhere to a fixed public plan for doing so. The plan is based on recurrent instantiation of invariant items […]. Being invariant, sentences are context-free, and so proof against the vagaries of changing speakers, hearers and circumstances, rather as coin of the realm is valid irrespective of the honesty or dishonesty of individual transactions.

It is certainly the case that mainstream, cognitively-oriented linguistic theory assumes invariance, abstracting away from diversity. Jackendoff (2011, p. 587), in discussing speaker knowledge of the conventional form-meaning mappings of a language, asserts that "[t]wo speakers are mutually intelligible if their own personal mappings are close enough to enable them to achieve mutual understanding on the basis of exchanged signals". He goes on to observe that "[w]e typically idealize this situation by assuming that the mental systems in the members of a speech community are uniform and thereby can be regarded as a single language". He does acknowledge that the abstraction is not appropriate for all circumstances, however, pointing out that "we readily drop the idealization when dealing with differences of vocabulary, dialect, and register. We also drop the idealization, almost without noticing, when dealing with young children's speech, which only approximates adult language." In other words, the idealization is not tenable in sociolinguistics and developmental psycholinguistics. But if we wish to examine ELF as an expression of internal linguistic diversity from a cognitive rather than a sociolinguistic perspective, and in *usage* rather than *learning*, then we need to look beyond mainstream linguistic and psycholinguistic theory.

Notoriously, 20th-century psycholinguistic theory was concerned almost exclusively with mental representation and processing in monolinguals, mostly English speakers, and speakers of Standard English at that. The past couple of decades have, gratifyingly, seen an increasing amount of neuropsychological research with bi- and multilingual people (e.g. Nicol 2001; Grosjean & Li 2013; Schwieter 2019). Yet this multilingual turn in psycholinguistics has not been applied to ELF. Given its dimensions of diversity and status as a mode of use rather than an international variety, it is hard to imagine how language processing

in ELF could be studied in the controlled, replicable conditions required for experimentation. Having said that, one psycholinguistic phenomenon relevant to the diversity of ELF usage which has been subjected to significant empirical scrutiny over the past decade or so is structural priming (Jackson 2018). Structural priming refers to the effect whereby exposure to a linguistic construction in input enhances the likelihood of its use in output. So, for example, having just heard or read a passive construction will make it more probable that you will use one yourself. This occurs because the mental representation of the construction in memory receives activation during receptive processing and so is more available in ensuing productive processing. In a review of the phenomenon, Pickering and Ferriera (2008) suggest that structural priming serves two important functions: (a) to promote alignment between interlocutors in dialogue; and (b) as an implicit learning mechanism. The former recognizes the shared natural environment in which structural priming occurs, as conversational participants tune their communicative behavior – both linguistic and non-linguistic – to enhance cooperation and understanding. The latter explains longer-lasting restructuring of mental representations, which happens automatically and unconsciously, on the basis of persistent repetition of constructions in usage.

Both of these functions of structural priming have heightened significance for ELF. With lowered expectations of shared linguistic norms, participants in ELF interactions need to be as resourceful as possible, exploiting opportunities to signal their cooperation and facilitate mutual understanding. Tacitly establishing what we might call "micro-conventions" on the fly by accommodating to one's interlocutors' distinctive linguistic forms is one way of doing this (cf. Hynninen 2016). The cognitive mechanism involved in achieving this formal alignment is structural priming. If ELF induces micro-conventions which override the mainstream conventions taught and tested in EFL and ESL, they may also become entrenched through repetition at the individual level, and this "alternative learning" can help explain the diversity of linguistic forms with which ELF is associated. There is even some experimental evidence from structural priming for the possibility that usage can lead to the entrenchment of micro-conventions which contravene wider community norms, although it is limited and not from ELF contexts. Luka and colleagues (Luka & Barsalou 2005; Luka & Choi 2012) demonstrate how reading aloud repeated instances of sentences in English by NSs can lead subsequently to higher judgments of grammaticality on structurally identical sentences compared with controls. This "structural preference effect" was found after a delay of seven days by Luka and Choi (2012). Increases in judgments of grammaticality were particularly strong for sentences which had been rated as only "moderately grammatical" by naive native speakers. Luka

and Choi (2012) conclude that this is evidence that "incremental adjustments to the language processing system occur on a continuous basis and may extend to acquisition of novel syntactic structures" (p. 355). This may be what is happening with the entrenchment of originally transient micro-conventions, including "inaccurate" NNS forms, when experienced in ELF interactions and repeated across ELF usage events. But it is unclear how this could be modeled in an experimental context.

These observations suggest that psycholinguistic models based on behavioral and neuropsychological data will not, at least in any direct way, be sufficient for theorizing the linguistic/cognitive diversity of ELF. This is because psycholinguistic theory assumes that what is being processed, and what is mentally represented, is conventional (shared) linguistic code. Despite some precedents in the literature on processing in the context of L1 dialect variation (Loudermilk 2013), psycholinguistic theory is not set up to handle the distinctive diversity involved. But the conclusions drawn about implicit learning from the work on structural priming do point to a cognitively-oriented theoretical framework that can better accommodate ELF: the family of approaches known as Usage-Based Linguistics (UBL), to which we now turn.

6. Usage-based linguistics and individual linguistic resources

Usage-Based Linguistics addresses two main issues: development and systematicity. In other words: (a) how language develops in infants, in adults, and across the lifespan (i.e. processes of *usage* and *entrenchment*); and (b) how it is socially structured in shared systems for meaningful communication, and how those systems change over time (i.e. processes of *conventionalization*). In UBL, language is conceptualized as a cognitive resource constructed and continuously developing in individual minds on the basis of implicit analyzes of the frequency and distribution of form-meaning pairings in the input experienced during usage events (Langacker 2000; Tomasello 2003; Goldberg 1995; Ellis & Wulff 2015). Systematic patterns of language are not determined "top-down," as rules conforming to hard-wired universal principles. Neither are they monolithic sets of fixed social conventions to which individual speakers have (greater or lesser) access. Rather, they emerge "bottom-up" in individual minds on the basis of variable, socially-contextualized, experience. Essentially, the message of UBL is that people construct and entrench form-meaning regularities on the basis of what they are frequently exposed to (and go on to deploy) in meaningful usage.

For adult language learners in educational contexts, this means that implicit learning occurs independently of what they are instructed in, and are expected

to learn, in classrooms. Moreover, in ELF, as we have seen, people are exposed to diverse manifestations of English in conditions in which shared norms cannot be assumed, and where the focus is on effective sharing of meaning rather than adherence to a monolithic set of formal conventions. In UBL, constructional accounts are increasingly being applied to SLA (Ellis & Wulff 2015), although the emphasis is implicitly on "target (NS) constructions", i.e. the pursuit of accuracy. But such approaches can equally explain how NNS forms may become entrenched as constructions across learning and usage. One way is through the constructional notion of abstract schemas (Tomasello 2003). These are mental representations which include slots that can be filled with specific items, e.g. the phrasal type *let's [V]* and the morphological type *[ADJ]-ness*. For NNSs, open slots in schemas they have constructed may be filled by items which NS norms disallow. For example, although all children acquiring L1 Inner Circle English end up adhering to the adult norm which prevents non-count nouns like *advice* and *furniture* plural from appearing in the schema *[N]-s*), some NNSs do not acquire the filter and, for them, constructions like *advices* and *furnitures* become entrenched. In other words, L2 learning and usage conditions may foreclose any "retreat from overgeneralization" as discussed by Ambridge et al. (2012). As we have seen, ELF favors such conditions, given the compromised principle of conventionality it involves. Furthermore, constructional schemas strongly entrenched in the NNS's L1 may also attract English L2 lexical material, leading to NNS forms traditionally accounted for in SLA by models of cross-linguistic influence.

UBL therefore provides an appropriate theoretical framework for understanding and explaining the distinctive diversity involved in ELF. Although the phenomenon has not been discussed in the mainstream UBL literature, ELF scholars have addressed its cognitive dimensions almost uniquely from a UBL perspective (e.g. Alptekin 2013; Hall et al. 2017; Hall 2018a; Mackenzie 2014; Mauranen 2012; Vetchinnikova 2015, 2019; Vetchinnikova & Hiltunen 2020). Of greatest relevance to the issue of ELF and diversity is the centrality in UBL of entrenchment in individuals as a result of their participation in usage events. Entrenchment has mostly been studied on the basis of cross-sectional corpus data (Stefanowitsch & Flach 2017). Yet given the emphasis placed on entrenchment as a result of subjective experience in unique usage events, it is perhaps surprising that the individual level has not been focused on more. Dąbrowska (2016), for example, points out that Cognitive Linguistics (a usage-based framework) has ignored the individual level, particularly as pertains to individual differences, which she has documented in several publications (e.g. Dąbrowska 2012). And Blumenthal-Dramé (2012) criticizes UBL for its "assumption that the gap

between the individual-mental and the collective-behavioural levels can be bridged via statistical generalizations over [cross-sectional] corpus data" (p. 31).

Focusing on individual language users and their idiolectal resources is not very common in any brand of linguistics, although the individual mind is the locus of language for most of them. For Chomsky (1986), the proper object of analysis in linguistics is the construct he termed "I-language", an individual's internalized knowledge of their language. And the assumption is not restricted to generativism: Hall Jr (1985, p. 353), a critic of Chomskyan linguistics, asserts that "all phenomena of language exist only in the 'know-how'… of individual speakers, i.e., in their idiolects . . . Each idiolect exists only in the brain of the speaker who uses it". UBL too holds that language knowledge, both form and meaning, resides in individual minds. Croft (2000) states unambiguously that grammar is "a real, individual, psychological entity, not an abstraction that does not have a psychological (or physical) existence" (p. 27). Langacker (2008, pp. 30) asserts that "[f]or purposes of studying language as part of cognition, an expression's meaning is first and foremost its meaning for a single (representative) speaker". And Östman and Trousdale (2013) entertain the possibility of "shift[ing] the focus away from social and cultural categories like 'language' and 'dialect' in order to foreground the individual speaker, his or her internal linguistic network, and the social and cultural knowledge s/he associates with particular forms" (p. 482). Yet, beyond authorship identification studies in literary criticism (e.g. Love 2002) and forensic linguistics (e.g. Coulthard 2004), there are very few studies of individual L1 idiolectal usage. All that I know of use corpus data. One is Mollin's (2009) investigation of the collocational preferences of Tony Blair on the basis of a corpus of transcripts of his public speaking. Another is Barlow's (2013) UBL-framed study of the idiolectal features of several White House press secretaries. There is also Schmid and Mantlik's (2015) examination of a single construction across historical literary corpus data, including that of individual authors, which shows the interplay between idiolectal patterns of entrenchment and communal patterns of conventionalization.

There have been several studies of individual L2 learning trajectories in classroom contexts, some within UBL. Notably, Eskildsen (2009, 2012, 2015) has charted the development of a variety of English constructions by two learners who have L1 Spanish, using longitudinal classroom corpus data. In one study, Eskildsen (2009) shows how a learner, Carlos, developed knowledge of modal *can* in an incremental fashion, through experience and then productive use of the form with a succession of main verb exemplars. Tammelin-Laine and Martin (2016) chronicle the development of the Finnish negative construction by four adult nonliterate L2 learners. Like Eskildsen, and as predicted by UBL accounts,

they observe exemplar-driven development of the construction, with gradual accretion of complexity, and the learning trajectories and outcomes they tracked were marked by significant individual differences. These studies of idiolectal SLA demonstrate how learning can happen piecemeal through participation in unique usage events, rather than the application across the board of learned rules.

But there has been only very limited work on the individual resources brought to, deployed in, and shaped by, ELF usage (i.e. independently of learning). Vetchinnikova (2015) is, I believe, the first study by an ELF scholar to use the UBL framework to analyze individual usage data. In this study, Vetchinnikova examines multi-word units in thesis drafts from different disciplines written in English by five NNS Master's students at a Finnish university. She compares these "production samples" with multi-word units used in: (a) an "exposure sample" of the publications each student had referred to; and (b) a reference sample of the publications referred to by one of the other students from a different discipline. She found that the multi-word units used by each individual coincided to a much greater degree with those used in the publications they cited (average 64 %), compared with those cited by other students (26 %). She interprets this as evidence for idiolectal profiles shaped by prior experience with linguistic input, just as predicted by UBL. But the ELF status of the data is debatable. Vetchinnikova (2019) describes the thesis drafts as belonging to "a typical academic English as a lingua franca (ELF) environment", citing one of the students who told her that they were writing their thesis for Swedish as well as Finnish colleagues. Yet academic writing is formal and highly normative. The samples of English they have been exposed to in this genre are from published sources which are likely to have been written according to NS Standard English norms, and furthermore, to have been copy-edited and style-corrected to ensure greater conformity to these norms (Jenkins 2014). Nevertheless, Vetchinnikova's careful analysis demonstrates how idiolectal L2 patterns tend to emerge from the language that users are exposed to.

In a similar study which more closely resembles typical ELF interaction, Vetchinnikova (2017) examines samples of individual commenters on blog postings from a NNS blogger. The corpus covers interactions on the blog over the course of seven years, involving over 4,000 commenters in addition to the blog author. Analysis of lexical preferences associated with the *it is [ADJ] that* construction for the author and five prolific commenters shows significant individual differences in comparison to a reference corpus constituted by a sample of text from less frequent commenters. Vetchinnikova uses the individual and cross-sectional corpora to represent language on the "cognitive plane" and the "communal plane" respectively, concluding that in the former case entrenched

lexical preferences result in significantly different idiolectal profiles. The claim is reinforced by a type/token analysis of four-word lexical bundles across the two types of corpora, which shows that individuals have a greater variety and larger number of lexical bundles, reflecting individual preferences.

Finally, colleagues and I (Hall et al. 2017) conducted a corpus study of a single NNS user of English who uses the language in an ELF context. We examined a collection of emails sent by Antonio, a multilingual (Italian-L1) manager in a South African company, over an 18-month period. In Vetchinnikova's terms, this was the production corpus, reflecting the cognitive plane. Focusing on the *Can you/Could you [V]?* construction alternation used in requests, we compared Antonio's usage of the alternation with that in: (a) emails he had received over the period and 18 months prior to it (the "exposure corpus"); and (b) the massive EnronSent mail corpus of emails from a multinational corporation (Styler 2011), as a general reference corpus for the genre. Both of these latter corpora represent usage of the alternation on the "communal plane". The first reflects the usage Antonio experienced in the multilingual context of his online daily business interactions, where around 60 % of his 292 individual correspondents were L2 English users. Given its size and scale, the EnronSent corpus was taken to reflect global usage norms for the genre as a whole. We found that Antonio has an overwhelming preference for *can* over *could* in this construction (84 % vs 16 %), differing significantly from the usage in the reference corpora, where *could* is used in over 40 % of requests he experienced in emails directed to him and in 35 % of requests in the genre as a whole. We explored the possibility that the preference was due to Antonio's initial learning experience and/or differences in his construal of the constructions' pragmatics, but concluded that neither alone was able to account for the high numbers of *can*. Detailed examination of the distribution of token frequencies of verb types occurring in the constructions' frames reveal that a single verb, *assist*, although relatively uncommon in the overall genre, is particularly common in the input Antonio received. This seems to be the source of Antonio's structural preference, attracting to the schema slot a broad range of other main verbs. This exemplar-driven entrenchment of patterns is precisely what UBL proposes as the motor of development and usage (cf. Griess 2005, on the special role of verbs in this process).

7. An ontological perspective

What emerges from these studies is a view of language as overlapping but non-identical sets of individual resources which users deploy and develop in usage events. In the ontological framework I have been developing over the past few

years (Hall 2013, 2020), English construed in this way may be defined as a set of resources "represented in the minds of individuals, in different quantities and degrees of entrenchment, which allows them to use certain linguistic features and constructions meaningfully with individuals who have sufficiently similar sets of resources" (Hall 2020, p. 23). The framework theorizes other ways in which English can be understood to exist as an ontological category, with a fundamental distinction drawn between conceptualizations of English as sociopolitical construction on the one hand and as sociocognitive phenomenon on the other. The former is a monolithic conceptualization, identified with "Standard English" as a component of (originally English) national identity. Like a monolith, English in this view is a single object, with a fixed form and shape, distinct from others. It is essentially this view that Harris (1981) asserts has led to the "fixed code fallacy" in linguistics. The latter view is a "plurilithic" one (Pennycook 2007), in which English is composed of multiple resources, processes, and products, is uncontained by defined borders, is formally and functionally diverse, and undergoes constant dynamic restructuring. It is this view that I have been pursuing here.

Adapting Chomsky's (1986) term "I-language" (where the "I" indicates individual, internal, intensional), I call the cognitive resources involved "I-Englishes" (Hall 2020). Furthermore, to acknowledge the situational contingency of their formal and functional diversity, I posit that I-Englishes are indexed in language users' minds to "I-registers" (Hall 2013), i.e. subsets of lexico-grammatical resources which become associated with certain external contextual conditions. In bi- and multilinguals, some I-registers will draw on resources associated with a particular named language. So, for example, Antonio's I-registers will include: resources of Italian activated in phone calls to family and friends in Italy; resources of English activated with family and friends in South Africa; limited Afrikaans co-activated with English in interaction with other friends there; and a set of rather formal English resources, including the *Can you [V]* construction, in business emails. A similar approach to this diversity of linguistic resources has been recognized also by scholars of translanguaging. Otheguy et al. (2015), for example, adopt an idiolectal approach in which separate named languages are social constructions, ontologically distinct from language understood as a cognitive phenomenon. This renders cognitively untenable the view of bilingualism as "dual competence" in two separate language systems. They distinguish the ontological categories and associated naming practices thus:

> [I]n accepting terms like 'language', 'a language,' 'monolingual', and 'bilingual', we are using categories that have nothing to do with individuals when seen from their own

> internal linguistic perspective, categories that have nothing to do, that is, with the billions of the world's idiolects, which exist in a separate, linguistically unnamed and socially undifferentiated mental realm. (p. 293)

In erasing the borders between named languages in the mental realm, their idiolectal view of translanguaging is consistent with the perspective on ELF developed here. The disregard for monolithic "named language" boundaries typifies both phenomena. Neither translanguaging nor ELF are consistent with the mainstream ontology of English as a single, fixed system. The argument I have pursued here suggests that such a conceptualization is an ideologically imbued social construct, and that what we call English is better understood as a set of plurilithic resources, processes, and products. But unlike scholars who have reached a similar conclusion from a critical, non-cognitivist perspective (e.g. Canagarajah 2020; Pennycook 2020), the idiolectal view locates the diversity of resources involved at the level of cognition, in individual language users' minds.

8. Implications and conclusions

In this chapter I have explored linguistic diversity through a cognitive lens, focusing on English and its use as a lingua franca in global contexts. This focus allowed me to critically examine the status of community norms in mainstream assumptions about what constitutes a (named) language, and to problematize the associated construct of "accuracy" in SLA. I concluded that the distinctive diversity of ELF resides in the absence of an expectation of shared norms in the habitual interactions between heterolingual L2 users which characterize the lingua franca mode. According to this view, the diversity is best explained in terms of patterns of usage and entrenchment at the cognitive, idiolectal level, as theorized in UBL. Understood thus, English is conceptualized not in terms of a single ontological category, as a monolithic abstract system, but rather as distributed across millions of sets of plurilithically-constituted mental resources which are deployed in, and modified through, usage events. Adopting this radical ontological commitment presents both opportunities and challenges for applied linguists and others who seek to expose and resist the social injustices which arise from language ideologies based on monolithic thinking.

Ideologies of monolithic English (and other named languages) dominate public discourse and are perpetuated by educational processes (Lippi-Green 2012). In denying the diversity of English resources and practices that exist on the cognitive and communal planes, such ideologies result in social injustices for both native and non-native speakers (Piller 2016). As I have argued elsewhere (e.g. Hall & Cunningham 2020; Hall 2021), ontological clarity is a vital component of

efforts to contest harmful language ideologies. It is widely acknowledged that sociolinguists have contributed to this clarity and have challenged the pernicious effects of monolithic thinking about named languages by demonstrating the systematicity and the legitimacy of unstandardized NS varieties (cf. Labov 1982) and indigenized NNS varieties (cf. Kachru 1985). But on their own, such efforts are insufficient. Applied and critical sociolinguists have pointed out that they need to be complemented by greater understanding of the power of language ideologies. As Snell (2018, p. 370) observes with regard to NS dialectal prejudice: "[b]efore we can counter dangerous beliefs about language we first have to understand how they are socially produced and accepted as convincing and effective […]." This stance is equally true of NNS contexts and associated injustices, yet the way forward is less clear. In NS contexts, the discriminatory beliefs and practices involved can be transparently linked to the extralinguistic prejudices of racism (Flores & Rosa 2015) and class positioning (Snell 2013), and this should make them somewhat easier to expose and challenge. NNSs in L2 classrooms or in interaction with NSs, however, may be stigmatized solely by virtue of being users of NNS linguistic forms, independently of intersectional factors. This is due in part to the ingrained assumption that the principle of conventionality should necessarily apply in NNS contexts. The assumption manifests in TESOL and SLA as the powerful, prevailing belief that there must be a single learning model and target and that only so-called "standard" English forms can fulfill that role.

The dominant response to this in recent applied linguistics has been to shift the focus away from linguistic forms, associated as they are with accuracy, and instead to recast English as a social (local or translingual) practice (Pennycook 2010; Canagarajah 2013). This ontological shift, although welcome, has unfortunately been accompanied by the downplaying of English as cognitive resource (Canagarajah 2020; Pennycook 2020). Given what UBL is revealing about the ineluctably diverse and dynamic nature of L2 resources, and given how the approach complements rather than conflicts with sociolinguistic perspectives (Ortega 2018; Eskildsen 2020), this marginalization of the cognitive seems unwarranted. A recognition of the cognitive instantiation of language actually enriches the strategies that can be developed to promote ontological clarity about English, and therefore to contest monolithic ideologies (Hall 2021). Wicaksono and Hall (2020) argue that an ontology of English should be *useful* for teachers, learners, and users. As I have argued in this chapter from the perspective of ELF, an ontology which balances the cognitive with the social is useful because it explains how linguistic diversity, instead of leading to Babel, is a normal and inevitable input to, and outcome of, usage-based learning.

Teachers of English tend not to be easily convinced by arguments which might undermine their own investment in mastering the NS standard variety, and many have strong beliefs about grammatical accuracy which will not be overturned by appeals to English as a social practice alone (Hall 2021). It is here that a plurilithic conceptualization of English, emerging from a cognitive understanding of ELF, can play an important role in challenging monolithic thinking. The distinctive linguistic diversity found in ELF usage emerges naturally from the way the human mind constructs I-language resources from usage events. An understanding of this might go some way towards loosening the attachment of educators to unjust and unattainable learning targets. To help global learners participate felicitously in the diverse ELF scenarios they will find themselves in after they have left the classroom, educators will ultimately need to adapt their pedagogical practices towards the development of appropriate I-language resources, rather than knowledge of "accurate" forms.

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