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Research methods and intelligibility studies

ANDREW SEWELL*

ABSTRACT: This paper first briefly reviews the concept of intelligibility as it has been employed in both English as a Lingua Franca (ELF) and World Englishes (WE) research. It then examines the findings of the Lingua Franca Core (LFC), a list of phonological features that empirical research has shown to be important for safeguarding mutual intelligibility between non-native speakers of English. The main point of the paper is to analyse these findings and demonstrate that many of them can be explained if three perspectives (linguistic, psycholinguistic and historical-variationist) are taken. This demonstration aims to increase the explanatory power of the concept of intelligibility by providing some theoretical background. An implication for ELF research is that at the phonological level, internationally intelligible speakers have a large number of features in common, regardless of whether they are non-native speakers or native speakers. An implication for WE research is that taking a variety-based, rather than a features-based, view of phonological variation and its connection with intelligibility is likely to be unhelpful, as intelligibility depends to some extent on the phonological features of individual speakers, rather than on the varieties *per se*.

INTRODUCTION

The concept of intelligibility is central to much of the research that has emerged from the World Englishes (WE) and English as a Lingua Franca (ELF) movements. Berns (2008) compares and contrasts the two by examining how they employ “intelligibility” as a concept, concluding that ELF scholars tend to focus more on intelligibility than on interpretability and comprehensibility, the other two components of the so-called Smith paradigm (see Kachru 2008). The conclusion of Berns (2008: 328) is that the commonalities between ELF and WE are “seldom more than superficial”, not only because of the tendency of ELF research to have a more restricted focus, but also because of its pursuit of a “common core” of phonological features that are regarded as being important for mutual intelligibility (see, for example,

Jenkins 2000, 2007). Berns sees the idea of a common core as being incompatible with the WE tenets of “multiplicity and creativity” (2008: 328).

In this paper I will explore the concept of intelligibility in more detail, focusing on ELF intelligibility research such as that carried out by Jenkins, and will attempt to show that many of its findings can be explained by considering three interrelated areas. These are: linguistic factors, including functional load; psycholinguistic factors, including the concept of the “speaker-listener equilibrium” (Trudgill 2005a); and evidence provided by examples of language variation and change. By “explaining” the findings I do not mean to imply that research in this area is unnecessary – quite the reverse, as there is a great need for studies of intelligibility to be carried out in different settings. Furthermore, this article is not intended to be a critique of previous research. Rather, its aim is rather to increase the explanatory power of the concept of intelligibility by linking it with theoretical issues, and also to identify directions for further research. The ensuing discussion may also help to explain why the WE and ELF movements tend to view the concept in different ways.

INTELLIGIBILITY: DEFINITIONS AND RESEARCH

The use of “intelligibility” as an item of terminology is examined by Nelson (2008), who recommends the use of the tripartite framework of intelligibility, comprehensibility and interpretability (see Smith 1982). Intelligibility, in the sense of word and utterance recognition, is the natural concern of Jenkins (2000); her research mainly focuses on the segmental phonological features that affect mutual intelligibility. In this sense, and while Kachru (2005: 200) mentions the need to “rescue” the concept of intelligibility from a unidimensional interpretation by also considering comprehensibility and interpretability, intelligibility can to some extent be regarded as a prerequisite for successful communication. While an utterance may be intelligible but not comprehensible (see Smith (n.d.), cited in Nelson 2008: 301), it is hard to imagine the opposite case – comprehensibility without

intelligibility – in normal spoken communication. If comprehensibility and interpretability are likened to the notions of cohesion and coherence in written communication, then intelligibility is analogous to legibility; if letters or words cannot be recognised they cannot easily form part of a message, unless they are supplied by the receiver using contextual clues.

While earlier intelligibility research tended to make use of native speaker (NS) listeners, the research of Jenkins and others within the ELF paradigm is concerned with non-native speaker (NNS) interaction, based on the principle that this is increasingly the norm in international communication. The findings of the empirical research conducted by Jenkins (2000) into the causes of intelligibility problems in such interaction are by now well known, but it is worth briefly restating them. According to Jenkins, there is a core of phonological features which is necessary for “successful communication among NNSs of English from a wide range of different L1s” (2007: 23). The core includes:

- All consonant sounds, except for the dental fricatives /ð/ and /θ/ (the first consonants in *this* and *think*, respectively) and dark [ɰ] (the final consonant in *will*, in some NS varieties)
- Vowel length contrasts, such as between /ɪ/ (*ship*) and /i:/ (*sheep*)
- Initial and medial consonant clusters
- Nuclear (tonic) stress

This list constitutes Jenkins’s Lingua Franca Core (LFC) of phonological features; there are also “non-core” features, such as word stress, that were found to be unnecessary for successful communication (Jenkins 2007: 24). Before proceeding with an analysis of the LFC, some general points should be noted. The list was not presented as being definitive. There is a need for further research into the relative importance of the different areas, as well as into the contributions made by segmental and suprasegmental phonology. The LFC indicates the general importance of linguistic forms in successful communication, but Jenkins (2000) makes it clear that inter-speaker processes such as accommodation skills are at least as important as intra-speaker linguistic forms in securing international intelligibility.

While research continues to investigate the nature of ELF language use, taking both quantitative, form-focused approaches as well as more qualitative, process-based ones (see

Seidlhofer et al. 2006), the LFC still appears to be the clearest available indication of what internationally intelligible ELF interaction might be like. ELF scholars continue to refer to Jenkins's research when discussing the phonological aspects of ELF (see, for example, Seidlhofer 2005). While there have been few other studies involving NNS interaction, those that exist tend to confirm the overall accuracy of the LFC stipulations; the study of Deterding and Kirkpatrick (2006) is discussed in a later section of this paper.

EXPLAINING INTELLIGIBILITY

Having outlined the nature of the LFC and its application to intelligibility studies, I will now look at its recommendations in more detail. The components of the LFC will be discussed with reference to three explanatory factors. Firstly, linguistic factors include those that relate to particular sounds or contrasts, such as functional load and frequency of occurrence. Secondly, psycholinguistic factors, while related to the former category, arise from a consideration of speaker and listener perspectives and include processes such as word recognition and retrieval. Finally, supporting evidence from language variation and change in L1 English will also be presented, without any implication that ELF must necessarily follow similar patterns; rather, the evidence will be used to show that some of this variation and change can also be explained in terms of the operation of the first two factors. It is argued here that these explanatory factors apply to all users of English, albeit in slightly different ways.

Consonants

As noted above, the LFC allows some consonantal modifications, when compared with NS varieties. Dental fricative substitutions are permitted, so that pronouncing the word *three* as [fɹi:] or [tɹi:] would not be expected to reduce intelligibility. To explain these empirical findings, the concept of functional load may be useful. According to Brown (1991a: 80), "the

simplest expression of the functional load of a phonemic contrast is the number of words which this contrast serves to distinguish”. This measure is complicated by the fact that many minimal pairs involve different parts of speech (Brown 1991a), so that while verb pairs such as *thought/taught* and noun pairs such as *fate/faith* are potentially confusable, other pairs such as *those/doze* or *look/Luke* are less so, because speakers would not expect either member to occur in the same context. Another consideration, according to Brown (1991a) is the frequency of occurrence of the members of minimal pairs, so that the effective functional load of a contrast depends on how frequent both words are (Rischel 1962, in Brown 1991a: 83).

Using a ten-point scale to represent the overall importance of phoneme pairs, where 10 is maximally important and 1 minimally important, Brown (1991b: 221) ranks pairs involving dental fricatives between 7 (/ð, z/) and 1 (/f, θ/). Another linguistic explanation of why many substitutions of the voiced dental fricative /ð/ are unlikely to cause intelligibility problems relates to the distribution of the sound; it occurs in the definite article *the* and other high-frequency function words. Other things being equal, variants such as [də] for *the* are unlikely to lead to misunderstanding. Function words usually contribute little to overall meaning, compared with content words, and thus carry little functional load (if conceived of in a broader sense of “carrying important information”). The use of such substitutions in many L1 English accents (for example, in Ireland and New York; Wells 1982: 97) also suggests that these variants are unlikely to cause communication problems, although they may have other effects on listeners from different L2 English backgrounds (see Deterding and Kirkpatrick 2006).

The voiceless dental fricative /θ/ occurs less frequently in English. Brown’s low ranking of phoneme pairs points to a low overall functional load for this sound, but on the other hand it is more likely to occur in stressed syllables and in content words, including some high-frequency items such as *think* and *three*. This may increase its actual importance; confusion between *three* and *tree* was the source of a misunderstanding for a Chinese student in Singapore (quoted by Young 2003: 94), who heard as “You dig tree tree” the utterance “You take three three” when asking about bus travel. Incidentally, this “intelligibility incident”

raises the issue of the co-occurrence of intelligibility problems, as hearing *take* as *dig* may have increased the likelihood of hearing *three* as *tree*, if the theory of lexical priming (Hoey 2003) is accepted; *dig* and *tree* are perhaps associated lexically. It is important to remember, when considering the features affecting intelligibility, that problems may have a cumulative effect that exceeds their individual importance (see Abbott 1991).

It should also be noted that functional load is only one of the factors influencing intelligibility, and that “no empirical evidence is offered for its importance relative to factors at other linguistic levels” (Brown 1991a: 86). However, even non-teleological, non-optimizing explanations of sound change such as that advanced by Blevins (2004) acknowledge some role for functional load, while emphasising the importance of other linguistic factors such as phonetic similarity. The disappearance of the contrast between /w/ and /ʍ/ has made word pairs such as *which* and *witch* homophonous in many accents of English, and this is explained by Blevins (2004: 30) as being partly due to its low functional load, as well as to the weakness of the contrast in acoustic terms. If ELF is considered to be an arena for potential sound change in English, then it is likely that similar factors will continue to determine the nature of this change.

A consideration of functional load at the linguistic level naturally leads on to a consideration of communication at the psycholinguistic or information processing level, once the importance of both speaker and listener is acknowledged. The important concept here is what Trudgill (2005a) calls “the speaker-listener equilibrium”, referring to Dressler’s (1984: 31) observation that “the goals of better perception and better articulation often conflict with each other” (in Trudgill 2005a: 222); Wells (1982: 94-97) calls these opposing forces “the principle of least effort” and “the necessity to preserve intelligibility”. Applying these concepts to the dental fricatives suggests that common substitutions of these sounds may benefit the speaker by virtue of being easier to pronounce; substitutions such as [t, d] are seen as “more natural” (Wells 1982: 97). Crucially, they also do not appear to hinder the listener’s ability to process the information, because of the linguistic factors mentioned above. In terms of ELF interaction, it has been observed that “users of ELF take advantage of the built-in

redundancy of Standard English grammar” (Seidlhofer et al. 2006: 20); intelligibility research suggests they may do the same thing at a phonological level by omitting or replacing sounds that are non-essential.

The argument can be broadened to include substitutions such as L-vocalisation, in which the final consonant of words such as *bill* is replaced by a vowel, giving [biu] (Brown 1991a: 91). There are very few minimal pairs involving this sound; for some Hong Kong speakers *fuel* may sound like *fewer*, but generally there are few possibilities for confusion. A general tendency towards L-vocalisation is also suggested by its occurrence in many NS varieties, so that in New Zealand English “vocalized /l/ is now so prevalent that many people cannot make a dark [ɫ] preconsonantly” (Bauer 1986: 231, in Shockey 2003: 35). Historical evidence also suggests that L-vocalisation is a commonly attested phenomenon, not only in English but also in other languages (French has *loyal* and *loyauté*, where English has *loyal* and *loyalty*).

Three types of explanatory principle have therefore been identified: linguistic (for example functional load) and psycholinguistic (the speaker-listener equilibrium), supported by evidence from language variation and change. These principles will be applied to the other constituents of the LFC in the following sections.

Vowels

In general, fewer changes to the consonant system are allowed than with the vowel system, according to the LFC core; while only the consonant modifications above are seen as permissible, vowel substitutions are treated far more leniently. This is to be expected if one considers the history of the language:

Throughout its history, English exhibits striking instability in its system of vowels, while its consonants have remained relatively fixed especially since the fourteenth century...As to consonants, the English system has remained relatively stable throughout its history, and the inventory of phonemes has changed only slightly since about 1400. (Finegan 1990: 78, in Schreier 2005: 1)

It can also be explained from a psycholinguistic, information-processing standpoint. The language of text messaging demonstrates that consonants are more important for communication, at least orthographically; removing the vowels from the word *consonant* leaves *cnsnnt*, which would probably be decipherable from the context, but removing the consonants leaves *ooa*, which would certainly not be. This in turn suggests that the lexicon exerts its own constraints on phonological innovation, whether in terms of necessary “system preservation” (Wells 1982) or the possibly unnecessary preservation of features such as the dental fricative sounds.

The actual stipulation of the LFC is that vowel quantity (or vowel length) is important for communication, while vowel quality is not (with the exception of the /ɜ:/ vowel in words like *pearl*, whose substitution did cause intelligibility problems in Jenkins’s data). Drawing on the work of Jenner (1995), Jenkins (2000: 145) notes that vowel quality differs widely amongst NSs, and therefore cannot be afforded high priority in L2 teaching. This does not explain, however, why vowel quantity is more important in safeguarding intelligibility. There is some weak evidence from functional load, as according to one reference source (Higgins 2008) there are 471 minimal pairs involving /ɪ/ and /i:/, the sixth highest total of all vowel pairs. But the pair with the highest number of contrasts - /ɪ/ and /æ/, with 635 pairs - is differentiated by quality, so there does not seem to be any immediate linguistic explanation for the importance of vowel quantity, as opposed to quality. To further complicate the issue, some apparent quantity contrasts (such as that between /ɪ/ and /i:/) are actually differentiated by quality (Schneider 2004: 1128).

Taking a psycholinguistic, information-processing perspective leads to an important caveat about vowel substitutions, namely that they are likely to be problematic if there is a reduction in what Brown (1991: 77) calls “perceptual distance”. In other words, the qualities of the individual vowels are less important than the contrasts they serve to maintain. For example, the contrast between words of the TRAP and DRESS lexical sets is made by means of /æ/ and

/e/ in RP. While not all speakers or varieties use these vowels to make this contrast, if vowels overlap with the perceptual categories of listeners there may be intelligibility problems. Some users of certain varieties of English tend to conflate vowel distinctions, reducing perceptual distance for the listener and increasing the risk of intelligibility problems. This is exemplified by the encounter between Ugandan colleagues related by Abbot (1991: 233):

A: It was impossible because of the [dis'trakʃən].

B: Do you mean ['distrakʃən] or ['destrakʃən]?

Speaker B was unsure of whether Speaker A meant *distraction* or *destruction*; apparently both were feasible in Uganda at that time. This intelligibility problem could be due to a tendency towards the merger of the TRAP and STRUT vowels in East African English (Mesthrie and Bhatt 2008: 120). This contrast, achieved via /æ/ and /ʌ/ in RP, would otherwise serve to distinguish the two words.

The LFC does not indicate any problems with such quality changes, but this may be in need of further investigation. Trudgill (2005a: 222) points out that smaller phonological systems (for example, reduced vowel systems) may “make things easier for the non-native learner as producer”. But according to Trudgill’s idea of the “equilibrium”, these reduced systems create problems for the listener because they reduce the amount of phonetic information available for processing. There is also supporting evidence from L1 English accent variation; Wells (2005: 106) states that no NS accent merges TRAP and STRUT, because of the high functional load involved.

In ELF interactions these and many other sound substitutions may be especially problematic for intelligibility, as according to Trudgill (2005b: 95), “[n]on-native listeners require more phonological information than natives, not less”. Making use of background and contextual information may also be more difficult for non-native listeners; Dalton and Seidlhofer (1994: 26) suggest that second language learners often rely on acoustic information alone. All in all,

and especially if pedagogical recommendations are being made, it may well be safer to follow Trudgill's advice about aiming for a system "with the maximum number of readily attainable contrasts" (2005a: 226), although functional load considerations suggest that some contrasts are more important than others. While it is accepted that there will be considerable variation in vowel realizations in international communication, further research is needed to find out which types of variation or mergers are likely to affect intelligibility.

Consonant clusters

According to Jenkins's LFC, initial and medial consonant clusters should not be simplified in ELF interactions. Final consonant clusters can be simplified, but only in the ways that NSs simplify them (because "elision is governed by the rules of English", according to Jenkins 2000: 142). The first thing to note about final consonant cluster simplification is that it is a widespread phenomenon which "operates in all varieties of English and is classified as a universal process of spoken English" (Labov 1972, in Schreier 2005: 32). The greater economy of production achieved by the speaker through simplification partly explains this, but why should final clusters be less important than initial clusters in maintaining intelligibility? Again, a psycholinguistic approach predicts the greater information-carrying role of final clusters:

Lexical processing is a crucial factor to explain why initial clusters are more stable than final ones. Information lost at the beginning of words impedes word recognition whereas information lost at the end of words often occurs at little cost, word recognition being completed already. (Schreier 2005: 220)

Although the greater contribution of initial and medial clusters to intelligibility can thus be explained, there may be areas in which non-standard innovations have little or no effect on intelligibility. Many English speakers in Hong Kong delete the final /t/ or /d/ consonants in words such as *government* and *department* even when followed by a pause or a vowel, an

environment which would not normally be subject to elision according to the “rules” of NS varieties. But once again, a psycholinguistic or information theory approach suggests that such elisions are unlikely to threaten intelligibility, because the word is multisyllabic and has few competitor words by the time the final syllable is processed. Thus there may be ways in which a consideration of intelligibility permits greater variation and innovation than would be the case by following the patterns of existing varieties, and such innovations may even point towards future developments in English.

Nuclear (or tonic) stress

The correct production and placement of nuclear stress was found to be important for intelligibility in ELF interactions, where “the greatest phonological obstacles to mutual intelligibility appear to be deviant core sounds in combination with misplaced and/or misproduced nuclear stress” (Jenkins 2000: 155). Nuclear stress is more likely to affect comprehensibility and interpretability, rather than intelligibility, but once again its importance is predictable from a consideration of information processing. According to Barrera-Pardo (2008: 15), this importance “resides in its semantic implication: it highlights the part of the message on which the speaker chooses to focus”.

Non-core features

As well as the “core” features discussed above, Jenkins (2000) also refers to “non-core” items that are inconsequential for intelligibility. An example is the use of weak forms in function words, a feature of NS English accents which Jenkins believes is “unhelpful to intelligibility” (2007: 24). As the avoidance of weak forms is one of the factors that contributes to syllable-timed rhythm, this carries the implication that syllable-timed rhythm (as is found in many new varieties of English; see Crystal 1996) may actually be more intelligible than stress-timed rhythm. Kirkpatrick et al. (2008) conclude that “we should encourage our students whose L1 has a tendency towards syllable-timing (as does Cantonese, for example) to retain this” (p. 360). This is presumably because the use of full vowels, rather

than reduced vowels such as schwa, makes words easier to recognise. However, at present there is little empirical evidence to support the idea that syllable-timed speech is inherently more intelligible.

Avoiding weak forms and vowel reduction may appear to be preferable from a listener-oriented perspective, as for non-native listeners it might be desirable to avoid what Hung (2002) calls “the massive reduction and neutralisation of unstressed syllables” (p. 13; cited in Kirkpatrick et al. 2008: 360). However, this may depend on the listener’s language level. Applying the concept of the speaker-listener equilibrium and taking the speaker’s point of view, it is likely that vowel reduction decreases the amount of time and physical effort required for speech, while still allowing prominence to be placed on the most important parts of the message. Goldsmith (1993: 105) states that vowel reduction is a consequence of “minimizing articulatory effort”, and Dauer (2005: 548) contends that:

It would be very difficult for anyone to speak English at a natural speed and pronounce all the consonants, consonant clusters and long stressed vowels of English precisely without reducing syllables, either in length or quality. Simplification is inevitable: A speaker can either drop consonants (a typical solution for NNSs) or significantly reduce unstressed syllables, especially in function words (a common solution for NSs). In either case, the burden of speech production is significantly lessened.

This suggests that part of the language learning process involves learning which parts of the message are important for intelligibility, and which can be simplified or reduced without compromising intelligibility. In practice, the amount of reduction employed by a speaker in international settings may also depend on the topic or on the audience. Skilled speakers tend to be aware of areas such as speech rate, weak forms and idiomaticity, and adjust their speech accordingly. This does not mean that they are unable to use weak forms, something that might result from pedagogical recommendations based on listener preferences alone. So while the “non-core” nature of vowel reduction and weak forms in

terms of intelligibility is accepted, a consideration of the speaker-listener equilibrium suggests that these features may still be useful for some speakers in some situations, including certain types of ELF interaction.

Other studies of intelligibility

To further illustrate the operation of the explanatory principles outlined above, I will briefly consider the findings of two other studies. Deterding and Kirkpatrick (2006) employed a similar methodology to that of Jenkins, namely recording groups of non-native speakers in semi-structured conversation (all of the participants were teachers from the ASEAN countries). An analysis of the factors that impeded intelligibility identified five pronunciation features: a vowel substitution (that of [ɑ:] for /ɜ:/ in *pearl*); a consonant deletion (that of the /r/ in *three*, which was pronounced [ti:] rather than the non-problematic [t.i:]; of some other speakers); two consonant substitutions (pronouncing *holes* as [hounz] and *sauce* as [ʃɔ:s]); and a consonant insertion (*us* pronounced as [ʌts]). There is some similarity between these findings and those of Jenkins, as Deterding and Kirkpatrick (2006: 406) themselves note: “all five of these features are ones which Jenkins (2000) found caused problems in her data”. The relatively greater importance of consonants is also suggested by the findings of the study.

The study of Kirkpatrick et al. (2008) used ratings of intelligibility rather than analyses of “intelligibility incidents”. The researchers found that the English of the Hong Kong speakers in the study was “highly intelligible (comprehensible) in international contexts” (p. 374), even though all of them “displayed typical features of Hong Kong English pronunciation, such as use of [f] for initial *th*, the relative absence of reduced vowels [and] the occurrence of syllable-timed rhythm” (p. 361; see also Deterding et al. 2008). Again, none of these features is proscribed by the LFC, and the explanatory principles employed here would generally predict the high intelligibility of these speakers. They are maintaining a satisfactory speaker-listener equilibrium by omitting features that are unnecessary for intelligibility, while still achieving “system preservation” by producing important contrasts.

THE IMPLICATIONS OF INTELLIGIBILITY STUDIES

The implications of intelligibility studies are potentially far-reaching in terms of how new varieties of English are viewed, as well as being relevant for pedagogy. Despite the differences between ELF and WE perspectives on intelligibility, there are ways in which intelligibility provides a common thread between them. ELF research continues to have a focus on international intelligibility, whether in “norm-abiding” or “norm-developing” contexts of lingua franca use (Seidlhofer et al. 2006: 8). While WE research has tended to describe varieties on their own terms (see, for example, Hung 2000), applying the concept of intelligibility may help to identify different versions of local varieties, perhaps in terms of the cline of intelligibility posited by Kachru (1992: 65). This would in turn help to increase the acceptance of such varieties, at both pedagogical and general societal levels.

Before discussing these implications, the limitations of the concept of intelligibility should also be made clear. Lists of phonological features may give the misleading impression that intelligibility derives from linguistic forms and is speaker-dependent. As has been mentioned, non-linguistic factors such as accommodation skills (Jenkins 2000) and attitudes also play an important role. The nature of intelligibility as being interactional has also been noted, for example by Smith and Nelson (1985). However, the relative importance of pronunciation and of segmental phonological features *vis a vis* other areas was also indicated by the research of Jenkins (2000), thus leading to her identification of the LFC.

In terms of the general application of intelligibility studies, it may be the case that the search for a “common core” with reference to phonological features is unnecessary. Gibbon (2005) observes that instead of a common core of overlapping phonological essentials, a Family Resemblance Model “as manifested in the pluricentric approach of Bamgbose [1998] is perfectly adequate, even for prescriptive purposes” (p. 451). The tension between the centralised and decentralised approaches found in ELF and World Englishes is remarked upon by Berns (2008), who asks how mutual intelligibility can be safeguarded “when the

conditions, contexts and communicators in any instance of cross-cultural communication...are not identical or stable” (p. 331). The underlying reason for this tension is that “a common means of communication is in potential conflict with the ideals of societal multilingualism and individual plurilingualism” (Seidlhofer et al. 2006: 8). In the absence of pedagogic or planning interventions, there is simply no way to predict whether or how international intelligibility will be maintained. The prestige of existing NS models is highly influential sociolinguistically, while at a linguistic level the nature of the lexicon and the relative constancy of spellings also exert powerful centripetal forces and tend to constrain phonological innovation. But the centrifugal forces of substrate influences and local identities are also at work, and they may be more than a match for the “rational” force of intelligibility. I have deliberately avoided the contentious issue of acceptability, which may prove to be still more powerful; the research into ELF attitudes and identity conducted by Jenkins (2007) suggests that as yet there is generally little awareness or acceptance of NNS accents amongst ELF users.

The features-based approach to intelligibility, and the analysis of it adopted in this paper, has implications for both ELF and WE research. If the importance of certain phonological features in maintaining intelligibility is mainly a result of linguistic factors, then these factors apply in broadly similar ways to all speakers. The common currency of English communication is the lexicon, and one view of this is that the phoneme system is “a product of the lexicon, rather than the converse” (Shockey 2003: 69). It should be stressed at this point that while the phonemic systems of internationally intelligible speakers will thus tend to be somewhat similar, this still allows for a great deal of variation at the sub-phonemic level. Many regional and L1-influenced vowel realizations will not affect intelligibility, as long as important contrasts are maintained. This confirms that accentedness itself is not a problem, as accentedness and intelligibility are “related but partially independent dimensions” (Derwing and Munro 1997: 2). Nevertheless, intelligibility findings suggest that the differences between NS and NNS interaction are not very great at a phonemic level, although this may depend on the type of interaction and the proficiency level of the speakers. In terms of phonology, then,

ELF interaction may not always significantly “conflict with the ways in which NSs typically negotiate understanding” (Pickering 2006: 227), and ELF linguistic forms at the lexical and syntactic levels may show more differentiation. Although studies of how ELF users may create their own norms are valuable, the arguments above are more in line with the WE view of the target international English-speaking community as including “any combination of native and non-native speakers” (Smith and Bisazza 1982: 35, cited in Berns 2008: 329).

Another, related indication of a features-based approach is that intelligibility does not inhere in varieties, but rather in the phonological features of speech (although there may be characteristic features of varieties that do affect intelligibility). It is therefore somewhat unhelpful to claim, as do Kirkpatrick et al. (2008: 359) that “some native speaker varieties are not as internationally intelligible as has commonly been supposed” and that “many non-native varieties are more intelligible throughout the world than is often believed, being more intelligible than certain native speaker varieties”. Intelligibility resides in the speaker and his or her linguistic forms, not in the variety. While there certainly may be speakers of native varieties who are found to be less intelligible (see, for example, Smith and Rafiqzad 1979), without an analysis of the phonological features of their speech it may be premature to claim that their “variety” is less intelligible. This perhaps indicates a limitation of the “varieties-based” approach to World Englishes, which has been built “on an extrapolation (and idealisation) from the individual choices made by individual language users” (Bolton 2008: 11). Bolton believes that “current research into the linguistic differentiation of individual varieties points less to the characterisation of such varieties as uniquely-constituted entities and more to an appreciation of the ways in which the structural features of such varieties develop” (2008: 9). This may mean, for example, that descriptions of local varieties need to take account of factors such as proficiency and variation, especially when considering the expanding circle. Many varieties (whether inner circle or outer circle, NS or NNS) will have subvarieties, and an identification of these would help to avoid making generalisations.

A more general implication of intelligibility research is that we should be ready to accept and value any variety – or subvariety thereof – that can be shown to be internationally

intelligible, assuming of course that intelligibility, rather than identity affirmation, is an aim of the speaker. By adopting an analysis of the characteristic features of that variety or subvariety, we can be more persuasive in confronting the “fear” that new varieties may be unintelligible in international contexts (Kirkpatrick et al. 2008: 359). In many research contexts there is great variation in phonological data, which can arise from factors including age, level of education and socioeconomic class (Wee 2008: 481). It is crucial for the acceptance of new varieties that we consider their intelligibility and distinguish between “local accents and careless speech” (Luk and Lin 2006: 17), especially where pedagogical applications are concerned. Failure to do so will only encourage the tendency to accept exonormative standards as the “correct” models; Bolton (2008: 9) notes that “[d]espite the patient explanations of many linguists, the use of such terms as ‘Hong Kong English’, ‘Indian English’, ‘Malaysian English’, ‘Philippine English’ and ‘Singapore English’ has typically evoked negative reactions from business and political leaders”. An analysis of intelligibility could help to identify a threshold level of pronunciation that will preserve intelligibility while having the additional virtues of being attainable and preserving “cultural and local overtones” (Wee 2008: 496). It would also assist in the production of suitable materials for the teaching of pronunciation in local contexts, avoiding the tendency to rely exclusively on native-speaker models.

Finally, if a features-based view of intelligibility is adopted, one that thus focuses on the similarities, rather than the differences, between English users, it is interesting to consider how the English-speaking community can best be visualised. As a complement to the Kachruvian concentric circles of inner, outer and expanding circle users, Prodroumou (2008) has proposed a model based on “unilateral idiomaticity”:

Figure 1. The concentric circles of English users (adapted from Prodromou 2008: 259)

The term “unilateral idiomaticity” was coined by Seidlhofer (2001), and refers to “the use of idiomatic language by a speaker...that is not understood by the other participants in the interaction” (2008: 215). In terms of phonology, it could easily be extended to include “unilateral intelligibility”, an insufficient command or awareness of key intelligibility-preserving features. This representation of English users also accords with the proposals of Kachru (2005: 12), who makes a distinction between “genetic nativeness” and “functional nativeness”. Both the “inner circle” and the “outer circle” include L1 and L2 users of English, as suggested by the approach to intelligibility taken in this paper.

CONCLUSION

In this paper I have argued that by and large, empirical findings on intelligibility in NNS-NNS interactions can be explained using the perspectives of linguistic factors (including functional load) and psycholinguistic or information-processing considerations (the speaker-listener equilibrium), supported by evidence from language change and variation. If this is so, there may be implications for how language variation is viewed, from both ELF and WE perspectives. Far more research into intelligibility is needed, and this will continue to affect

the relationship between the two movements. It is hoped that the analysis adopted here may contribute to a more robust theoretical foundation, while also suggesting directions for further research. The intelligibility studies performed to date have been tended to be small in scale, and in the words of Prodromou (2008: 258), “[t]he search and research continues”.

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