Evidence for Multicompetence

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The term multicompetence describes "the compound state of a mind with two grammars" (Cook, 1991a, p. 112). This paper reviews evidence addressing two questions:

1. Do people who know two languages differ from people who know only one in other respects than simply knowledge of an L2? L2 users differ from monolinguals in L1 knowledge; advanced L2 users differ from monolinguals in L2 knowledge; L2 users have a different metalinguistic awareness from monolinguals; L2 users have different cognitive processes. These subtle differences consistently suggest that people with multicompetence are not simply equivalent to two monolinguals but are a unique combination.

2. Do people who know two languages have a merged language system rather than two separate systems? The L1 and L2 share the same mental lexicon; L2 users codeswitch readily; L2 processing cannot be cut off from L1; both

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languages are stored in the same areas of the brain; L2 proficiency relates to L1 proficiency. This evidence suggests merged systems at some level in some areas, even if some of it is open to other interpretations.

A final section discusses more general issues. Much SLA research is biased by adopting the monolingual as a norm rather than the multicompetent speaker. Multicompetence distinguishes diachronic transfer during the learner’s acquisition from synchronic transfer between the two languages at a single moment of time. Multicompetence starts when there is systematic knowledge of an L2 that is not assimilated to the L1. Holistic multicompetence is seen as an offshoot of polylectal grammar theory applied to monolinguals. Language teaching should try to produce multicompetent individuals not ersatz native speakers.

Cook (1991a) introduced the term multicompetence to describe “the compound state of a mind with two grammars” (p. 112), to contrast with monocompetence, the state of the mind with only one grammar. It was argued that the poverty-of-the-stimulus argument of language acquisition is not so much how the child learns a grammar with a setting for each parameter as how the child learns one or more grammars with one or more settings for each parameter—multicompetence. Multicompetence then arose out of fairly technical questions within UG (Universal Grammar) theory.

The notion that people who know two languages are different from monolinguals can be extended to areas of second language research other than the poverty-of-the-stimulus argument. Most research compares L2 learners implicitly with L1 speakers; the target the learners are supposedly aiming at, even if few of them achieve, is the competence of the monolingual, not a competence peculiar to L2 speakers. But, if L2 speakers are different, all such comparisons are invalid; at best L2 learners should be compared to the fluent bilingual, not the monolingual. The present paper is an attempt to extend the idea of multicompetence to other areas; a parallel paper deals
with the narrower UG issues (Cook, in preparation). The broad topic to be considered in the first part of this paper, *Evidence for Multicompetence as a Distinct State of Mind*, is the evidence that a person who knows a second language is indeed different from someone who knows only one: Is multicompetence a different state of mind from monocompetence? Or is multicompetence simply adding a second L1 competence, albeit defective? A second topic discussed in the second part of this paper, *Evidence for Holistic Multicompetence*, is the relationship between the language systems of multicompetence in the same mind; are they distinct and parallel or do they merge at some level of operation? In broad outline, this issue is whether multicompetence is *separatist* or *holistic*—whether the languages form separate systems or one. The separation between the questions of the first two parts of this paper is more presentational than real, because they are connected in many ways. Finally, the third part of this paper looks at some general issues raised for linguistics and for second language acquisition research by the notion of multicompetence: the bias towards a monolingual perspective, the nature of transfer, the start of multicompetence, the links to polylectal grammars, and the relevance to language teaching.

EVIDENCE FOR MULTICOMPETENCE AS A DISTINCT STATE OF MIND

The first topic is whether multicompetence is indeed a distinct state of mind from monocompetence. The question to be discussed in this part is: Is there evidence that people who know two languages differ from people who know only one in other respects than simply knowledge of an L2? A range of evidence from different areas can go some way toward answering this question.
L2 USERS DIFFER FROM MONOLINGUALS IN KNOWLEDGE OF THE L1

Learning a second language might have effects on the speaker's knowledge of the L1. As the concept of transfer has been used chiefly in the direction of L1→L2 rather than L2→L1, there is little appropriate research to show the effects, or lack of effects, of the L2 on the L1. The L1 phonological systems of L2 users might, for example, be different from those of L1 monolinguals. In the area of Voice Onset Time (VOT), this has indeed been an incidental result of several pieces of research. Flege (1987b) found that French learners of English have a longer VOT for the voiceless /t/ sound in French than do monolingual speakers of French. Spanish/English L2 users behave similarly so far as VOT is concerned in both English and Spanish (Nathan, 1987); it makes no difference to their perception of stops which language is used. Obler (1982) found Hebrew-English bilinguals exaggerate VOT differences for each language in production but occupy an intermediate position between the two languages for perception. As Watson (1991) sums up, "In both production and perception, therefore, studies of older children (and adults) suggest that bilinguals behave in ways that are at once distinct from monolinguals and very similar to them" (p. 44).

Other areas also show effects of the L2 on the L1. The meanings that words have in the L1 can be influenced by the L2; a monolingual speaker of Korean uses the word paran sekj "blue" to mean something greener and less purple than a Korean who also knows English (Caskey-Sirmons & Hickson, 1977). Magiste (1979) measured how quickly German-speaking children learning Swedish in Sweden carried out production tasks, such as naming pictures, and comprehension tasks, such as Mark the third letter from the left. A byproduct of this research was the discovery that bilinguals were slower than were monolinguals for all tasks, not just in their L2 Swedish but also in their L1 German.
The loss of the L1 as an L2 user becomes dominated by the L2 is also relevant. Seliger (1989) describes a bilingual child whose L1 system of English relative clauses was gradually invaded by the L2 Hebrew relative system so that all relative pronouns were simplified to *that* and the pronominal copy was kept instead of empty trace, as in "I going to tell you a different thing that everyone likes it". Seliger hypothesizes a principle of redundancy reduction in which the L1 grammar is reduced whenever the L2 has a simpler rule.

To sum up this section, the indications are that multicompetent people have different knowledge of their L1s than do monolinguals: Multicompetence in some respects contains a different state of L1 knowledge.

**ADVANCED L2 USERS DIFFER FROM MONOLINGUALS IN KNOWLEDGE OF THE L2**

The point has already been made that few L2 users reach equivalent knowledge of the L1 and the L2, that is to say, become balanced bilinguals. Since Selinker (1972), the term *interlanguage* has been employed to recognize that these states of knowledge are not debased versions of the L2 but have systems of their own, a point confirmed by many SLA studies. In this sense it is hardly surprising that the L2 user has a different knowledge of the L2 from a monolingual. The assumption of interlanguage theory has nevertheless still been that the L2 learner gravitates toward native competence—that the final state of L2 knowledge should be the same as L1 knowledge, rarely as it may be achieved. In the words of Coppetiers (1987), the product of L2 learning "has been accepted at face value as more or less identical with the internal product of first-language (L1) acquisition, i.e. native competence" (p. 545).

But the L2 user's knowledge of the L2 might differ from the monolingual's in various respects. As Meara (1983) points out, "There is no reason why a person who speaks both English and Spanish should behave in the same way as a monolingual
speaker of either language" (p. iv). Coppetiers (1987) used grammaticality judgments to test a variety of sentences on L2 users of French who were totally accepted by native French speakers. In terms of quantitative results, whereas native speakers varied from the norm between 5% and 16%, nonnative speakers varied between 23% and 49%; none of the 21 L2 users fell within the extreme bounds of the native group. In terms of qualitative results, the chief problems were with semantic interpretation of such features as the distinctions between the *imparfait* and the *passé composée* and between *ce* and *il*.

So, L2 users who could otherwise be considered balanced bilinguals—if anyone is—had substantially different grammatical intuitions from native speakers, even if these were essentially undetectable in their speech. Whereas Coppetiers (1987) found some L1 effects in this, he sees an overall difference in interpretation of grammatical contrasts between L1 and L2 users of French. One interpretation of this by Long (1990) is age-related: All Coppetiers’ learners had started L2 learning late. However, as no comparison is made with early childhood learners, it is not clear whether this is really an age effect or is true of all L2 competences. So far as multicompetence is concerned, there are two logical issues. One is whether a specific L1 grammar affects the L2 grammar of L2 users; the other is whether the general state of multicompetence itself has consequences for knowledge of the L2, regardless of the L1.

White (1989) puts the standard assumptions of L2 learning research clearly: “For the moment, possible differences in the end results of L1 and L2 learning will be ignored, particularly the fact that many language learners do not attain a grammar which is effectively identical to native speakers” (p. 37). The argument here is that this is getting rid of the baby with the bath water; such simplification ignores one of the essential features of L2 learning: The grammar of the L2 in a multicompetent speaker is not the same as the apparently equivalent grammar in a monolingual.
PEOPLE WHO KNOW AN L2 HAVE A DIFFERENT
METALINGUISTIC AWARENESS FROM
PEOPLE WHO KNOW ONLY AN L1

It might be that there are no connections between the
language faculty and other cognitive processes. It might also be
that there is some seepage from language to other faculties. If
the multicompetent mind is different, effects of this could be
apparent in other aspects of the individual’s cognitive system.
People who know two languages might “think” differently from
those who know only one. Evidence for this can be looked for in
the literature on the cognitive effects of bilingualism. Initially
bilingualism was held to be deleterious; for example, Thompson
(1952) claimed “There can be no doubt that the child reared in
a bilingual environment is handicapped in his language growth”
(p. 367). Later research has mostly dismissed these results as
unreliable and has pointed to the advantages of bilingualism
for children, provided that certain social and psychological
conditions are fulfilled; for example, Diaz (1985) asserts “grow-
ing up with two languages is, indeed, an asset to children’s
intellectual development” (p. 16).

The classic experiments by Ianco-Worrall (1972) with
Afrikaans/English children aged 4–9 years provide evidence
that children who know a second language are ahead of
monolinguals in the scale of development from phonetic to
semantic awareness of words. The experiments with children
summarized in Ben Zeev (1977) are also frequently cited. She
found superiority for Hebrew-Spanish bilinguals over
monolinguals on use of cues in classification tasks and for the
Verbal Transformation illusion. More recent research has been
carried out in the context of Bialystok’s (1987, 1990) model that
separates analysis from control dimensions. This established
that bilingual children are better at spotting the grammaticality
of semantically anomalous sentences but slightly worse at
evaluating ungrammatical but nonanomalous sentences; they
are also better at judging how many words are in a sentence or
string of words. "The effect of bilingualism was seen primarily on the development of control of processes" (Bialystok, 1987, p. 163). Galambos and Hakuta (1988) similarly found bilingualism "enhances metalinguistic awareness" (p. 160), increasing with L2 proficiency but also related to L1 proficiency. So, in overall terms, the research indicates that the multicompetent individual approaches language differently in terms of metalinguistic awareness; multicompetence has an effect on other parts of cognition. As a digression, this discovery makes it harder for second language research to use grammaticality judgments as an experimental task, because the actual sensitivity of the L2 user will be different from a monolingual regardless of the actual state of grammatical knowledge.

L2 USERS HAVE DIFFERENT COGNITIVE PROCESSES FROM MONOLINGUALS

The previous section showed that L2 users were different from monolinguals in so far as their conscious awareness of language was concerned. The present section looks at some other cognitive effects. One question is cognitive flexibility. It has sometimes been claimed that L2 users are more flexible at solving certain types of problems. Landry (1974) found that, after 5 years of an FLES program, L2 users scored higher on standard tests of divergent thinking, which value flexibility, originality, and fluency, though this advantage over monolinguals did not appear earlier. Lambert, Tucker, and d'Anglejan (1973) also showed that immersion children in Canadian schools scored better on the "unusual uses" test of creativity. Peal and Lambert (1962) found that bilingual children performed better than did monolinguals on both verbal and nonverbal IQ tests; in short, "the bilinguals appear to have a more diversified set of mental abilities than the monolinguals" (p. 22). (This is of course a different point from the claim that higher IQ results in better L2 classroom learning.) Feldman and Shen (1971) showed advantages for bilingual
5-year-olds on “object constancy, naming and the use of names in sentences” (p. 243). Other areas of cognitive superiority cited by Diaz (1985) are “measures of conceptual development, creativity, metalinguistic awareness, semantic development, and analytical skills” (p. 18).

The research mentioned here again shows that the L2 user has a different mind from a monolingual in some respects. Claims about the enhancement of cognitive powers often figure in syllabi uses for language teaching; for example, the U.K. National Criteria for Modern Languages aim “to promote learning skills of a more general application (e.g. analysis, memorising, drawing of inferences)” (Cook, 1991) — or what used to be called brain-training. The positive advantages of knowing a second language have been emphasized here, as is typical of current research. But, of course, the same point is proved by L2 users who have suffered from their bilingualism; it is the difference in cognition that matters, not whether it is beneficial. Both negative and positive effects are signs that L2 users think differently from monolinguals.

So the multicompetence state (L1+L2) yields more than the sum of its parts, L1 and L2. Multicompetent speakers think differently from monolinguals, at least in some areas of linguistic awareness. Multicompetence is a different state of mind.

Let us go back to the overall question discussed in this part: Is there evidence that people who know two languages are different from people who know only one, in other respects than simply knowledge of an L2? There seems to be a prima-facie case that multicompetence is indeed a distinct state of mind from monocompetence. The knowledge of the L1 and of the L2 are different in L2 users; metalinguistic awareness is improved; cognitive processes are different. Many of these differences are not immediately apparent; nevertheless, they consistently add up to the conclusion that people with multicompetence are not simply equivalent to two monolinguals but a combination that is sui generis.
EVIDENCE FOR HOLISTIC MULTICOMPETENCE

This part investigates how the two language systems in multicompetence relate to each other. One extreme possibility is that they form separate language systems; the other extreme is that they make up a single unified system. The former has been termed the separatist position by Grosjean (1989). It claims that there are two or more discrete coexisting language systems in multicompetence without links between them; Grosjean terms it a monolingual view of bilingualism as it treats both languages as if they were the first language. In some ways, it resembles the view formerly encountered as coordinate bilingualism in which the two languages are separate entities within the same mind. Much psychological work on bilingualism has indeed assumed such separation and has proceeded to measure how and why it occurs, as discussed in Lambert (1990). For the separatist, multicompetence is only a label for people who possess two or more language systems within the same mind, which systems may in themselves be different from the systems of monolinguals.

But there is a possibility that the two or more languages of multicompetence form a total language system rather than independent systems. This can be called the holistic position (Grosjean, 1989); it bears a resemblance to the former compound bilingualism position in which the two languages are interrelated in some way. The question to be addressed in this part is: Is there evidence that people who know two languages have a merged language system rather than two separate systems? Again, a heterogeneous set of evidence will be considered that could be appropriate.

THE L1 AND L2 SHARE THE SAME MENTAL LEXICON

One of the problems for the study of bilingualism has been whether the mind holds two dictionaries, one per language, or has a single dictionary that combines both languages in some
form, or has a language independent semantic area leading to separate lexicons. Evidence that the two dictionaries are combined or that they depend on a language-neutral system would support multicompetence. Evidence for independent lexicons would count against multicompetence, or at least suggest that vocabulary is a separate component that plays no part in the conjoined system that makes up multicompetence.

Firstly, there is much evidence for interrelationship between the two lexicons. Caramazza and Brones (1979) show that reaction time for a word is sensitive to the frequency of its cognate in a second language; Cristoffanini, Kirsner, and Milech (1986) find morphemically unrelated translations do not influence performance whereas morphemically related words do. The research program pursued by Kirsner and his colleagues uses evidence from several paradigms that contrast access to words that are cognates with access to words that are translations:

Where individual words are concerned, the gist of our argument is that representation is language-specific, but only as an artifact of morphological independence. When this contrast is relaxed, as it is with cognates, the results suggest that language is not a critical factor, and this conclusion must hold for individual units and for the lexicon as a whole.

(Kirsner, 1986, p. 39)

Evidence for differential processing of nonwords by L2 users suggests to Grosjean (1990b) that the other language is still residually activated when a bilingual is in a monolingual mode, as does evidence that bilinguals take longer to access codeswitched words in the bilingual speech mode than to access base language words in the monolingual speech mode. He sees the difference between the two lexicons as not so much an on/off switch as a difference in the activation level for each language.

There is also evidence for a language neutral store leading to two lexicons. Miljkovitch (1980) interprets two experiments on word list learning as showing bilinguals group words from
two languages into categories that exist in neither language. The concept mediation hypothesis claims that the two lexicons are connected via an underlying "amodal conceptual system" (Potter, So, von Eckhart, & Feldman, 1984, p. 36). Schwanenflugel and Rey (1986) similarly argue that semantic priming is mediated by a conceptual system shared by both of the bilingual's languages. Frenck and Pynte (1987), however, argue that some of the facilitation in semantic priming in experiments occurs because of target use of pointers rather than automatic processing.

The experimental paradigm of Beauvillain and Grainger (1987) uses words that look the same in two languages but have different meanings, for example coin (English: piece of money) versus coin (French: corner). Bilinguals were shown to have access to both meanings rather than just to the one specific to the language being used; the other language is not totally deactivated. They conclude that the initial stages of lexical access are not language specific. Grainger and Beauvillain (1987) used a similar logic to compare language-specific orthography such as vieux (French) and month (English) with language nonspecific orthography, such as brain or sapin. In their model, features of the input dictate which lexicon to search, so that words unique to one language in orthographical terms are largely unaffected. Grainger and Beauvillain (1989) similarly argue from semantic priming evidence for the language independence of L2 word recognition at the lexical access stage, but for language independent stores at later stages. As Neufeld (1976) put it, "there is ample reason to question the popular concept that an individual who knows two languages possesses a separate internalised dictionary for each language" (p. 32).

Recent evidence for independent stores is harder to find. Lopez and Young (1975) regard memory for word lists as "supportive of the language interdependence hypothesis" (p. 981). Kirsner, Brown, Abrol, Chadha, and Sharma (1980) claim "lexical representation in bilinguals is language specific" (p. 585), that is, stored by the word not by the lexicon. Clifton,
Sorce, Schaye, and Fiszman (1978) interpret results from a translated word recognition task as evidence that L2 users store the words themselves in a language specific form.

In general, this literature treats the lexicon as word lists with a meaning attached to each item. The research does not address other areas of the lexicon that have interested linguists or developmental psycholinguists, such as the lexical entry with its syntactic and semantic subcategorization, lexical systems and relationships between words, componential analysis, or prototype theory, and so on. The possibility has also been ignored here that there is more than one mental lexicon in the monolingual speaker for dealing with, say, spoken versus written modalities, or different registers or dialects, going up to the 12 interrelated components in the language processing model found necessary by Coltheart (1989). The research cited uses complex experimental paradigms and argumentation that have their own momentum rather than relating to other areas, for example, semantic priming, distinguishing words from nonwords or cognates from translations, shared orthographic forms, and so on. Whereas this literature broadly supports the holistic multicompetence position, its view of the lexicon is too limited to support it very strongly.

L2 USERS CODESWITCH READILY FROM L1 TO L2

The phenomenon of codeswitching is seen in the Bahasa Malay/English sentence *Suami saya dulu slim and trim tapi sekarang plump like drum* (Before my husband was slim and trim but now he is plump like a drum). Codeswitching involves changing from one language to the other in midspeech. It occurs under particular social conditions when both speakers know the same two languages and are talking about particular topics. At one time, this was thought to be an abnormal use of language, and was, for example, disparaged by bilinguals themselves and discouraged by language teachers. More recently, it has been seen as a perfectly normal use of language by
L2 users; Grosjean and Soares (1986) talk of two modes of speech, a single language mode in which the speaker chooses one of the two languages to use, and a codeswitching mode in which the speaker uses two.

Codeswitching would be impossible if the languages were not intimately related rather than two compartmentalized systems. To quote Woolford (1983), "The two monolingual grammars cooperate in the production of codeswitched utterances, but none of the rules are altered in any way" (p. 534). Poplack (1980) has outlined two restrictions on switching: the free morpheme constraint that switching between the word and its ending is only possible if pronunciation stays in one language, and the equivalence constraint that switching takes place only when it violates the grammar of neither language. There are, therefore, systematic access points between the two language systems in multicompetence; the two systems form one supersystem. As Sridhar and Sridhar (1980) put it, "Not only are elements from two languages present in the same sentence, these elements are integrated into a unified syntactic structure by a complex interaction of constraints" (p. 413). The very naturalness, smoothness, and comprehensibility of codeswitching is evidence in favor of holistic multicompetence. In the words of Sridhar and Sridhar (1980), "The right approach, therefore, seems to be to avoid both the strong linguistic independence model and the merged system model in favour of an interactionist model of overlapping systems" (p. 413).

But switching from one language to another takes time. In early research, Kolers (1966) found that codeswitching added about 0.3 to 0.5 seconds per switch to reading aloud, whereas Macnamara and Kushnir (1971) found 0.2 seconds per switch in silent reading. Sridhar and Sridhar (1980) argue that much of this increased time is an artifact of the experiments; the languages of the texts were not usually codeswitched according to the proper constraints, but were instead a jumble of two languages. Does it count against holistic multicompetence if operating the constraints of the mixed language mode adds
some minimal processing time to speaking? A larger system might take longer to use simply because of size rather than because of switching time. Overall, codeswitching provides ambiguous support for holistic multicompetence.

**L2 PROCESSING CANNOT BE CUT OFF FROM L1**

This section gathers some diverse evidence that L2 users have the L1 available to them while processing the L2. At a phonological/lexical level, Altenberg and Cairns (1983) tested the acceptability of possible words such as *girch* and nonwords such as *lepk*; L2 users were the same as monolinguals for words but differed in their assessment of nonwords—again evidence, as they put it, that "both sets of constraints are simultaneously available to the bilingual during processing" (p. 186). At a lexical level, Hamers and Lambert (1972) gave an auditory version of a STROOP test to L2 users in both languages and found that they were slightly faster and made slightly fewer errors in a language-switched condition than in a monolingual condition. Hence, users are employing a combined system in which both languages are on tap simultaneously. At a semantic/syntactic level, Blair and Harris (1981) showed that a knowledge of Spanish helped Spanish/English L2 users to understand sentences that were translations of Spanish idioms more quickly than did monolinguals. Again, the whole combined system seems to be available to the user. These experiments suggest that the L2 user does not effectively switch off the L1 while processing the L2, but has it constantly available. There may be difficulties in distinguishing separatist from holistic multicompetence. Having the other language available for consultation does not unerringly point to one system, convenient as this might be, but to a usable access system for tapping both languages.
BOTH LANGUAGES ARE STORED IN THE SAME AREAS OF THE BRAIN

*Hemispheric Lateralization:* The first language is believed by and large to be stored in the left hemisphere of the brain rather than in the right hemisphere. It has been conjectured that second languages may be stored in the right hemisphere; Albert and Obler (1978) took the line that bilinguals use their right hemisphere for language more than do monolinguals. Others see greater or lesser right hemisphere involvement according to whether bilingualism is early (left), or late (ambihemispherical) (Vaid, 1983), or according to whether acquisition is informal (right), or formal (left) (Vaid & Genesee, 1980), or according to stage of acquisition (Obler, Zatorre, Galloway, & Vaid, 1982). Bergh (1989) finds great inconsistency of results, which he attributes to "the lopsided and flawed methodological background of bilingual lateralisation studies" (p. 90–91). The review article by Paradis (1989) rejects the idea of bilingual storage being different from monolingual. Similarly, the review by Zatorre (1989) concludes "there is very little evidence for the idea that the right hemisphere participates in multiple languages in any way significantly different from the case of a single language" (p. 144). For our purposes, it seems that there are at least strong voices which say that the second language is stored in the same hemisphere as is the first language, with what dissent there may be being attributed to methodological problems. The variation in right hemisphere involvement may be due to the lack of a single route to L2 knowledge; second languages may be learnt by many means rather than the single means found in L1 acquisition and, consequently, may have a greater apparent hemispheric spread.

*Same Sites:* Another possibility is that there is indeed differential storage of the two languages within the brain, but not necessarily in different hemispheres. The research paradigm is to ask bilingual patients to name objects while their cortical language zones are electrically stimulated. The classic...
experiment of Ojemann and Whitaker (1978) located some sites in which stimulation disrupted both languages and some in which it disrupted one or other of the languages. Zatorre (1989) takes the view not only that the bilingual’s different languages may be stored in different places, but that different aspects of language may be stored in different places; hence, it is unrevealing to use a crude division into L1 storage sites and L2 sites based on research that takes only naming into account. Whereas this area of research is at present far from extensive, it suggests a version of multicompetence in which physical storage of both languages is complexly intertwined.

THE LEVEL OF L2 PROFICIENCY IN ACADEMIC CIRCUMSTANCES IS RELATED TO THE LEVEL OF L1 PROFICIENCY

Teachers have frequently suspected that the success of the L2 learner in a classroom relates to how good the learner is in the first language. Cummins (1991) surveys the evidence on the interdependence hypothesis that the ability in the two languages is closely related in an academic context. To take some of his examples, Skutnabb-Kangas and Toukomaa (1976) showed a significant correlation between Finnish and Swedish verbal academic proficiency in Finnish-speaking children in Sweden; Linde and Lofgren (1988) found positive relationships in similar children; Gonzalez (cited in Cummins, 1991) looked at Hispanic children in the United States and found “a considerably stronger relationship between English and Spanish reading skills than between English reading and English oral communicative skills” (p. 75).

To the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or environment) and adequate motivation to learn Ly.

(Cummins, 1991, p. 87)

In a different type of research, Skehan (1988) found significant
correlations between the level of the L1 at the age of 5 years and the level of success at L2 learning in the teenager.

There seem to be strong links between L1 ability and L2 classroom success, even if the results do not generalize for L2 learning outside the classroom. Of course, like any correlation, this does not demonstrate causality: the learners may have been affected by some third factor, say intelligence. Nevertheless, for our purposes, it is equally possible to take the results as showing that the two competences somehow form one system, that is, multicompetence.

In an effort to keep the two questions distinct, the second part of this paper has not drawn on evidence from the first part. Multicompetence as a distinct state of mind including two language systems does not necessarily imply the same as holistic multicompetence in which the two systems are closely related. The different knowledge of the L1 and of the L2 from monolinguals is not in itself a sign of a merged system. Watson (1991) for example interprets the phonological processing evidence as showing that at least for production “the bilingual may have two systems, but which differ in some way from those of monolinguals” (p. 44). Conversely, Seliger (1989) sees the process of language loss as the merging of two systems when “the bilingual allows both ‘faucets’ to be open and both languages to flow together” (p. 173), which we can translate into British usage as having kitchen mixer taps rather than separate hot and cold ones. Similarly, Magiste (1979) argues that her experiment provides evidence “for an interdependence hypothesis of bilingual storage” (p. 88). Yet, little of the evidence considered in the first part actually contradicts the holistic version of multicompetence.

Let us go back to the question tackled in this part of the paper: Is there evidence that people who know two languages have a merged language system rather than two separate systems? To review the categories of evidence we have discussed: So far as the lexicon is concerned, the evidence is mostly in favor of one interdependent store rather than separate
stores, though the view of the lexicon in this research is limited; codeswitching is neutral about the level of the two systems at which integration takes place; the inability to detach L2 processing from L1 may indicate merged systems or an efficient access system; the lack of separate areas for storage of the two languages in the brain suggests one system; the link between L2 proficiency and L1 proficiency suggests an overall link at some level of operation. This patchy set of evidence indicates not only that there are gaps in the current research coverage but also that the question of holistic multicompetence should be modularized into separate questions that apply to different components of language; some aspects of the total multicompetence supersystem may be unified, some may not. The lexicon may be one merged system, phonology another, syntax perhaps separate systems. As Costermans and Galland (1980) put it for cognition, “some cognitive organisational principles may remain relatively language specific while others remain more language independent” (p. 381). The other possibility is individual variation: Some L2 users have holistic multicompetence, some separatist multicompetence. This would need further types of investigation. In some ways, it might yield a distinction similar to that between compound and coordinate bilingualism; however, the large literature on this dichotomy from Weinreich (1953) onwards is now fairly difficult to interpret; McLaughlin (1984), for example, says “The distinction has not been validated experimentally and is difficult to maintain in practice” (p. 8).

It is often taken for granted that the onus is on those who wish to do so to provide evidence for the systems being joined rather than evidence that they are separate. Monolingual bias suggests that it is somehow normal to have two separate systems rather than one, as discussed below; Skutnabb-Kangas (1981) points out, “A monolingual society with monolingual individuals was the norm, and consequently the use of language by bilinguals came to be judged against this monolingual norm” (p. 102). But it is also possible to start from the bilingual view
that it is normal to have a single unified system of two or more languages and to require evidence of separation. Indeed, this is a simple use of Occam's Razor—Principia non sunt multiplicanda praeter necessitatem, paraphrasable as theories should not be complexified unless there is a need. On this argument, when the evidence does not distinguish between the single system of holistic multicompetence and the multiple systems of separatist multicompetence, the single system should be preferred because it is the more economical explanation. For example, Occam's Razor may suggest codeswitching has one system rather than two; it is more economical to postulate a single system in the mind than the proliferation of separate systems for each language known by multilingual speakers, say in Central Africa or Hong Kong.

This brings us up against the general issue summed up by Lambert (1990):

How is it that the bilingual is able to "gate out" or set aside a whole integrated linguistic system while functioning with a second one, and a moment later, if the situation calls for it, switch the process, activating the previous inactive system and setting aside the previous active one? (p. 203–204)

Whereas evidence has been marshaled here in favor of merged systems, in some ways the evidence for separate systems is so obvious that it does not need to be presented: L2 users do, as a matter of course, operate not only in the codeswitching mode, in which both languages are on-line simultaneously, but also in the monolingual mode, in which they can use one or the other of the two languages. After all the people tested by Coppetiers (1987) were accepted as bilinguals; it was only on artificial grammaticality tests that their difference from monolinguals stood out. The aspects we have been looking at are perhaps peripheral. Most of the time, L2 users effectively keep the two languages separate.

Or do they? If lesser levels of L2 capability than the balanced bilingual are taken into account, the user may be unable to separate the two systems so efficiently. It is not just
that the L1 system affects the L2, but that both form a total system, which might indeed have the characteristics of interlanguage in that the L2 portion reflects much more than transfer of L1 elements. Seliger's (1989) concept of the redundancy reduction principle provides one starting point for discovering where the systems merge and where they remain separate.

A proper test for holistic multicompetence may be not just separation of two systems, but also whether the resulting overall system is different from the two systems added together. The supersystem of holistic multicompetence may have features that are present in neither language separately in monolinguals: for example, the intermediate settings for parameters found by Broselow and Finer (1991) and the intermediate VOT values found by Nathan (1987).

GENERAL ISSUES

THE MONOLINGUAL BIAS TO RESEARCH

The usefulness of the multicompetence idea is that it provides a different perspective from which to look at L2 learning. Instead of L2 users being treated as deficient monolinguals, they should be treated as people in their own right. Much L2 learning research has accepted the balanced bilingual or ambilingual (Halliday, McIntosh, & Strevens, 1964) as the yardstick by which other learners are measured. Yet, such perfectly balanced bilinguals form a small minority of those who have learned an L2. Taking them as the paradigm example leads to negative conclusions about L2 learning. Suppose a person functions at 100% in his or her L1. Measured against this yardstick, the L2 knowledge of a learner ranges from 0% to 100%. As learners seldom approach the upper limit, L2 learning has often been seen in terms of lack of success; few bilinguals succeed in achieving or maintaining equal balance between L1 and L2 knowledge. So, L2 learning research has
often tried to discover the reasons that L2 learning is comparatively unsuccessful. The general negative view can be seen in Bley-Vroman (1989), for instance, who discusses “nine fundamental characteristics of adult foreign language learning [of which] few are controversial” (p. 43); the first two are lack of success and general failure.

But suppose we think of the L2 learner as acquiring something extra rather than a substitute for the L1—the vocabulary, syntax, etc. of the L1 plus the vocabulary, syntax, etc. of the L2. The knowledge of the L2 increases the L2 user’s capabilities beyond those of a monolingual, rather than being a defective L1 knowledge. Measured against the 100% of a person who knows one language, the balanced bilingual is functioning at 200%; L2 learners of lesser achievement are still functioning at levels between 100% and 200%. Those who start from the balanced bilingual, see the L2 learner as a failure for not achieving full L2 competence; even bilinguals, according to Grosjean (1989), “often assume and amplify the monolingual view and hence criticise their own language competence” (p. 5). Those who start from the bilingual view, see the learner as a success in going beyond the initial L1, to whatever degree. This stepping beyond the original 100% may in itself be some explanation for the well-known fact that whereas the L1 learner invariably gets to 100%, the L2 learner seldom gets to 200%; it is because the L2 and the L1 are related in the mind that the L2 cannot be learned as a second L1.

As argued in Cook (1991a), one of the consequences of the multicompetence concept is the insight that much of second language research, and indeed linguistics, has been biased by taking its starting point to be monocompetence rather than multicompetence. Most human beings, in fact, know two or more languages rather than just one: It may well be unusual to possess only monocompetence. Second language acquisition research has been carried out mostly within countries or by individuals to whom knowing a second language is either a problem (when you are a lower-status minority) or a sign of
intellectual achievement (when you are a higher-status majority); Skuttnab-Kangas (1981) paraphrases Fishman’s account of bilingualism in the U.S. as:

If you have learnt French at university, preferably in France and even better at the Sorbonne, then bilingualism is something very positive. But if you have learnt French from your old grandmother in Maine then bilingualism is something rather to be ashamed of. (p. 96)

Seldom has the knowledge of a second language been taken as the ordinary state of mankind. As Illich and Sanders (1988) lament, “From Saussure to Chomsky ‘homo monolinguis’ is posited as the man who uses language—the man who speaks” (p. 52). It would be salutary for SLA research if it started from countries such as Cameroon in which a person may use four or five languages in the course of a day, taken from the 2 official languages, the 4 lingua francas, or the 285 native languages (Koenig, Chia, & Povey, 1983). Taking the opposite extreme from monolingual society as the norm may shake up our ideas about L2 learning and about the “deficiencies” of L2 learners, even if we decide in the end that that the average human individual knows neither one language nor many languages but around two. The primary question for linguistics should be not Chomsky’s (1986) “What constitutes knowledge of language?” (p. 3), but “What constitutes knowledge of languages?”, a line of thinking developed in Cook (to appear a).

TRANSFER AND MULTICOMPETENCE

Transfer is defined typically in the following terms: “Transfer is the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired” (Odlin, 1989, p. 37). In definitions such as this, transfer is used to explain the effects of the L1 on the L2, rather than the effects, if any, of the L2 on the L1; the influence is unidirectional rather than bidirectional. But influences may go in both directions: L2
learners show effects of the L2 on the L1, as was seen earlier. Interestingly, Weinreich (1953) defined interference in terms that allow it to go in both directions: "Those instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language" (p. 1); this mutual interaction was indeed explored in work on language contact, if not in second language acquisition research. The total state of multicompetence implies relationships between the two languages stored in the same mind at some level, even if not the merger of holistic multicompetence.

Definitions of transfer such as Odlin's are also ambivalent between transfer over time and transfer at a particular moment of time; influence may be either diachronic or synchronic. It is hardly in question that L2 learners' development is influenced by their L1 in well-documented ways, even if the importance of this is still controversial: Transfer affects the course of diachronic development. Synchronically, transfer explains differences in the resultant knowledge by transfer from the coexisting L1 state of knowledge. An example might be the differences between Japanese, Italian, and Dutch learners of English in finding the subject of the sentence (Harrington, 1987; Kilborn & Cooreman, 1987; McDonald, 1987). Even if the overall competences of learners with different L1s come to resemble each other more as they progress, this does not mean that they have not used transfer during the course of their language acquisition, even if they no longer find it necessary. I learned to swim with water wings but no longer use them. Elsewhere, a distinction has been made between code-breaking language and decoding language (Cook, 1977; 1991b). Code-breaking is the process of acquiring the knowledge of the language by attempting to understand messages, and leads to rules, parameter settings, and so on—the creation of knowledge in the mind. Decoding is the process of trying to understand or produce a message by using already established knowledge—the use of existing knowledge for a purpose. One is a diachronic develop-
mental process, the other a synchronic state. Transfer is a source of both code-breaking and decoding. As part of multicompetence, transfer may have both a historical source and also be part of the current knowledge state. This was, for example, emphasized by Weinreich (1953): "In speech, interference is like sand carried by a stream; in language, it is the sedimented sand deposited on the bottom of a lake" (p. 11).

THE START OF MULTICOMPETENCE

At what stage of L2 learning can one say that the learner possesses multicompetence? Is a person who speaks two words of another language multicompetent? A person who is capable of ordering beer in a bar but incapable of expressing his or her political views? A person who can translate a Latin poem into English laboriously yet correctly? In a general sense, the answer is clearly yes. Unlike adult grammatical competence, multicompetence is not a final steady-state of knowledge, because this is rare in L2 users and does not include knowledge of the L2 below the level of balanced bilinguals. Multicompetence refers to a person's knowledge of more than one language system; wherever there is language knowledge of an L2 that is not simply assimilated by the L1, such as lexical borrowing, there is multicompetence. The point of emergence is, therefore, when a system starts being used that is not just that of the L1. Hence, when multicompetence is applied to the learning of grammars within a principles-and-parameters model, the start of multicompetence would be when the user's grammar starts to differentiate between parameter settings for L1 and L2.

This use of competence to cover all systematic stages of acquisition of language knowledge is similar to its use in L1 acquisition, which predicates that the child possesses a competence at each stage of development vastly different from the adult competence that it will eventually become—the independent grammars assumption (Cook, to appear a). In other words, in acquisition studies of L1 or L2, competence has seldom
meant solely the final steady-state of knowledge, S*, but has referred to whatever temporary state the learner has reached. Multicompetence changes the target the learner is aiming at in the L2 by refusing to define it in monolingual terms.

HOLISTIC MULTICOMPETENCE AND POLYLECTAL GRAMMARS

The holistic multicompetence position bears a resemblance to the 1970s theory of polylectal grammars in dialectology (Bailey, 1973), which claims that the distinction between diachronic and synchronic views of language blurs the real nature of competence; a middle-aged speaker of a language can somehow understand the grammars of both the younger and older generations, even if he or she only uses one grammar productively. Similarly, a speaker can understand many dialects of a language even while speaking only one. The mind contains a single polylectal grammar that encompasses all the variants that it has to cope with in listening; language acquisition takes place “in such a way as to create an underlying grammar which will generate all the variants that he must competently cope with” (Bailey, 1973, p. 24). The theory of polylectal grammars sees the speaker as having a single system in the mind, incorporating several different variants simultaneously, even to be a speaker of a first language: “Competence is polylectal” (Bailey, 1973, p. 24). The concept of holistic multicompetence is in some ways an extension of polylectalism to two languages rather than two dialects. As Skutnabb-Kangas (1981) puts it succinctly, “A bilingual speaker’s choice of variety . . . should be able to be described in the same way as the monolingual speaker’s intralingual choice between different varieties” (pp. 38–39).

This is not to say that arguments against polylectal grammars have not been put forward; Harris (1985) shows that speakers of an English dialect of English do not understand the significance of after in Irish English; Smith and Wilson (1979) argue that speakers understand sentences not within their own
grammar either by analogy or by comprehension strategies rather than by having a flexible polylectal grammar.

MULTICOMPETENCE AND LANGUAGE TEACHING

Clearly, the concept of multicompetence has important consequences for the language teacher. Conventionally, language teachers have aimed at creating L2 competence in their students, differing over whether it is grammatical or communicative competence. But in both cases, the competence in question has been that of the native speaker. Much syllabus design has concentrated first, on making elaborate descriptions of the knowledge or behavior of the native speaker and, secondly, on selecting which parts of it the students need to know and need to be taught. Other approaches have looked at the activities or tasks that are possible in the L2 classroom without reference to the use of the L2 outside the classroom. The National Criteria for Teaching Modern Languages in the U.K. list the international goals of communicating with native speakers and the personal goals of developing language awareness, and so on; no mention is made of the student as a multilingual user. A syllabus that does not take the particular nature of L2 users into account will be inadequate.

There have been signs in recent years of some movement in this direction. The Examinations in Languages for International Communication (Institute of Linguists, 1988) test whether candidates can mediate between two languages. At beginner’s level, this may be reading an L2 travel brochure or listening to L2 answerphone messages to get information that can be used in the L1. At advanced stages, it might be researching a topic through reading L2 texts and conducting interviews in the L2 to write a report in the L1. In this international use of a second language, the L2 learner is not becoming an imitation native speaker, but a person who can stand between the two languages, using both when appropriate. Similarly, Byram (1990) talks of teaching pupils “intercultural communicative compe-
tence" (p. 87), which gives them the ability to stand between two cultures, seeing both L1 and L2 cultures in a new light.

Multicompetence also affects actual teaching. Many modern teaching methods treat the L2 in isolation from the first language; whether it is the communicative approach, the audiolingual method, the mainstream EFL methods, or the older direct method, the first language is shunned in the classroom. This is reminiscent of the way of teaching deaf children language by making them sit on their hands so that they cannot use sign language. The L1 is present in the L2 learners’ minds, whether the teacher wants it to be there or not. The L2 knowledge that is being created in them is connected in all sorts of ways with their L1 knowledge, as we have seen throughout. Recognizing this shifts the emphasis in the teaching techniques that are used. One possibility is the teaching method known as the New Concurrent Approach (Faltis, 1989; Jacobson & Faltis, 1990), which legitimizes codeswitching within the class by allowing it to happen at certain key points. In a class of English taught to Spanish children, the teacher can switch to Spanish when concepts are important, when the students are getting distracted, or when the student should be praised or told off. The teacher may switch to English when revising a lesson that has been already given in Spanish. Another possibility is reciprocal language teaching (Hawkins, 1981; Cook, 1989) in which two people with similar interests are paired who want to learn each other’s language and who alternate languages according to some system. These are only two of the ways in which multicompetence might be recognized in the classroom; many others remain to be worked out. Although teachers have been encouraged to accept their students as people in their own right, the heritage of the students that has been consistently denied them is their first language—except in countries and classrooms in which, for whatever reason, the first language has still maintained its presence in the classroom, such as Bulgaria.

This paper has tried to take the concept of multicompetence
a stage further. The first question was the difference of multicompetent speakers from others. If it had been found that L2 users thought about language in the same ways as do monolinguals, that their knowledge of the L2 and of the L1 was identical to that of monolinguals, that they used exactly the same cognitive processes as do monolinguals, then multicompetence would not have been a distinct state of mind. However, on each of these areas, the evidence went in the other direction. The second question was the merger of the two systems; had multicompetent people been shown to keep their lexicons entirely distinct, had codeswitching been shown to be difficult and unusual, had L1 processes been shown to be detached from L1 processes, had the two languages been stored in separate areas of the brain, had L2 proficiency been shown to be unrelated to L1 proficiency, then the multicompetence hypothesis would have been disconfirmed. Whereas there remains the general problem of how so much of the two language systems is kept separate, there is sufficient evidence here to suggest that the two systems are more closely linked than had been previously suspected, even if holistic multicompetence needs more precise definition and more evidence of its own to be fully acceptable. Many other issues remain: the differentiation of the two languages in simultaneous acquisition (Genesee, 1989), the reasons that so much of L2 learning of syntax in particular seems independent of the L1, the rethinking of language teaching methods, the relationship of the age factor to multicompetence, the problem of semilingualism when neither language of multicompetence is as efficient as a monolingual’s L1, all need much greater development. At one level, multicompetence is undeniable; as L2 users do not have two heads, their minds must be different at some level of abstraction. Some evidence has been presented that the two language systems are merged; the question is still largely open as to the level and extent of such merger and its modularity.
REFERENCES


