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Review Article

Communication Strategies in a Second Language: Definitions and Taxonomies

Zoltán Dörnyei
Eötvös University, Budapest

Mary Lee Scott
Brigham Young University, Provo

This paper examines trends in second language (L2) communication strategy (CS) research to date. We give a comprehensive review of the relevant literature from the last two decades, with particular consideration of the different ways in which CSs have been *defined* and of corresponding influences on the organization of strategy *taxonomies*. We first outline the history of CS research and discuss problem-orientedness and consciousness as defining criteria for CSs. We then offer a comprehensive list of strategic language devices and describe the major CS taxonomies, noting key trends, with special attention to current and future research orientations.

Zoltán Dörnyei, Department of English Applied Linguistics; Mary Lee Scott, Department of Linguistics

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Researchers first raised the notion of second language (L2) *communication strategies* (CSs) at the beginning of the 1970s, following the recognition that the mismatch between L2 speakers' linguistic resources and communicative intentions leads to a number of systematic language phenomena whose main function is to handle difficulties or breakdowns in communication. In fact, even a brief analysis of any spontaneous piece of L2 oral discourse reveals the importance of CSs in L2 users' verbal performance: These speakers (except those at a very advanced, "near-native" level) tend to spend a great deal of time and effort struggling to make up for their L2 deficiencies (cf. Gass & Varonis, 1991). The understanding of strategic language use has, therefore, been an important research direction during the last two decades, and a considerable amount of research literature has accumulated on the nature of CSs, taxonomies of strategic language devices, variation in CS use, and the practical implications of CS research (focusing, in particular, on the teachability of CSs).

At the same time, CS research does not lack controversies. There is no universally accepted definition of CSs; as a result, several competing taxonomies of CSs exist, including different ranges of language devices, from paraphrase to filled pauses, from code switching to interactional meaning-negotiation mechanisms (such as clarification requests). In fact, in view of the widespread use of the term "communication strategy" in applied linguistics —its coverage has by now become "compulsory" in any overview of L2 acquisition and use—it is surprising how little CS researchers agree about what exactly these devices are. This paper intends to provide an overview of CS research with a special focus on two key issues: the various *definitions* of CSs suggested in the literature and the different *taxonomies* of strategic language devices developed following these definitions. We selected these two focal issues because studies discussing other CS-related topics—such as task effect, variation according to proficiency level, the relationship between CS use in L1 and L2, the effectiveness of various CS types, or the usefulness of CS training—have often produced con-

troversial or contestable results due to the diverse conceptualizations of CSs. That is, those studies often made generalizations based on (partly) different language phenomena, whereas most researchers would now agree that strategic language behavior is highly complex, and intervening factors typically have only a subtle and non-uniform effect. Thus, we see the questions of definition and taxonomy as central to any further development in CS research.

First, we present a brief historical outline of CS research; then we summarize the different conceptualizations of CSs, looking into their various defining criteria. Next we attempt to provide a comprehensive list of the strategic language devices mentioned in the literature; finally, we present and discuss the most important classification schemes of CSs.

Historical Outline of CS Research

Selinker (1972) coined the term "communication strategy" in his seminal paper on "interlanguage", discussing "strategies of second language communication" (p. 229) as one of the five central processes involved in L2 learning. However, he did not go into detail about the nature of these strategies. Around the time Selinker's paper came out, Savignon (1972) published a research report in which she highlighted the importance of *coping strategies* (the term she used for CSs) in communicative language teaching and testing. A year later Váradi (1973/1980) gave a talk, at a small European conference, generally considered the first systematic analysis of strategic language behavior (message adjustment, in particular). Váradi's paper, however, was not the first published study on CSs; although it informally circulated among researchers, it only came out in print in 1980. By that time Tarone and her associates (Tarone, 1977; Tarone, Cohen & Dumas, 1976) had published two studies specifically focusing on CSs, providing the first definition of "communication strategy" and offering a taxonomy (Tarone, 1977) still seen as one of the most influential in the field.

The real "career" of CSs started in the early 1980s. First, Canale and Swain (1980; Canale, 1983) included them in their influential model of communicative competence as the primary constituents of one of the subcompetencies, *strategic competence*. Second, Færch and Kasper (1983a) published an edited volume, *Strategies in Interlanguage Communication*, which pulled together the most important published papers into one collection and also contained some important newly written studies (Bialystok, 1983; Dechert, 1983; Færch & Kasper, 1983c; Haastrup & Phillipson, 1983; Raupach, 1983; Wagner, 1983). These two publications were followed by increased research interest and a growing number of publications in the 1980s focussing primarily on identifying and classifying CSs, and on their teachability (e.g., Bialystok, 1984; Bialystok & Kellerman, 1987; DeKeyser, 1988; Færch & Kasper, 1984a, 1986; Harper, 1985; Kumaravadivelu, 1988; Paribakht, 1985, 1986; Scholfield, 1987; Tarone, 1984; Tarone & Yule, 1987, 1989; Willems, 1987; Yule & Tarone, 1990).

In the second half of the 1980s, The Netherlands became the dominant centre of CS studies as a group of researchers at Nijmegen University carried out a large-scale empirical project whose results both shed light on various aspects of CS use and challenged some aspects of the previous taxonomies (Bongaerts & Poulisse 1989; Bongaerts, Kellerman & Bentlage, 1987; Kellerman, 1991; Kellerman, Bongaerts & Poulisse, 1987; Kellerman, Ammerlaan, Bongaerts & Poulisse, 1990; Poulisse, 1987; Poulisse & Schils, 1989; Poulisse, Bongaerts & Kellerman, 1987).

1990 was an important year in CS research because of two comprehensive monographs by Bialystok (1990) and Poulisse (1990) (for reviews, see Váradi, 1992). The following five years brought further empirical and conceptual analyses (e.g., Chen, 1990; Clennell, 1994; Dörnyei & Scott, 1995a, 1995b; Yarmohammadi & Seif, 1992; Yule & Tarone, 1991) and several reviews (e.g., in Cook, 1993; in Ellis, 1994; Poulisse, 1994). Work on the teachability issue also remained in the foreground of research interest (Cohen, Weaver & Li, 1995; Dörnyei, 1995; Dörnyei & Thurrell, 1991, 1992, 1994; Kebir, 1994; Rost, 1994), and Poulisse (1993, in

press) made a potentially important attempt to place strategic language behavior in a broader framework of speech production, adapting Levelt's (1989) general psycholinguistic model of speaking. Two more projects in the making are likely to become landmarks in CS research, a volume edited by Kasper and Kellerman, *Advances in Communication Strategy Research* (in press; with contributions from Duff, in press; Kellerman & Bialystok, in press; Poulisse, in press-a; Ross, in press; Wagner & Firth, in press; Yule & Tarone, in press; among others) and a book by Yule, *Referential Communication Tasks* (in press), discussing a number of research methodological issues.

Different Approaches to Conceptualizing CSs

The traditional view. Researchers originally saw CSs as verbal or nonverbal first-aid devices used to compensate for gaps in the speaker's L2 proficiency. This view is reflected in Tarone's (1977) and Færch and Kasper's (1983b) definitions:

> Conscious communication strategies are used by an individual to overcome the crisis which occurs when language structures are inadequate to convey the individual's thought. (Tarone, 1977, p. 195)

> CSs are potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular communicative goal. (Færch & Kasper, 1983b, p. 36)

According to this conceptualization, CSs constitute a subtype of L2 problem-management efforts, dealing with language production problems that occur at the planning stage. They are separate from other types of problem-solving devices, *meaning-negotiation* and *repair mechanisms* (e.g., requesting and providing clarification), which involve the handling of problems that have already surfaced during the course of communication. Indeed, as Yule and Tarone (1991) pointed out, the research literature discussing the negotiation of meaning in L2 communication (for reviews: Gass & Selinker, 1994; Larsen-

Freeman & Long, 1991; Pica, 1994) has been entirely independent of CS studies.

Tarone's interactional perspective. The distinction between CSs and meaning-negotiation mechanisms was somewhat blurred by Tarone's (1980) offering a third well-known conceptualization, according to which CSs:

> relate to a mutual attempt of two interlocutors to agree on a meaning in situations where requisite meaning structures do not seem to be shared. (p. 420).

This definition is potentially broader than Færch and Kasper's (1983b, 1984a) or Tarone's earlier (1977) one. It introduced an *interactional perspective*; in Tarone's words, "CS are seen as tools used in a joint negotiation of meaning where both interlocutors are attempting to agree as to a communicative goal" (1980, p. 420). This interactional perspective would allow for the inclusion of various repair mechanisms, which Tarone considered CSs if their intention was "to clarify intended meaning rather than simply correct linguistic form" (1980, p. 424). Even though Tarone herself never extended the scope of her CS taxonomy to include interactional trouble-shooting mechanisms, other researchers did specifically list meaning-negotiation strategies among CSs (e.g., Canale, 1983; Dörnyei & Thurrell, 1992; Dörnyei & Scott, 1995a, 1995b; Rost, 1994; Rost & Ross, 1991; Rubin, 1987; Savignon, 1983; Willems, 1987).

Dörnyei's extended view. Dörnyei (1995) suggested an extension of the definition of CSs arguing that because a primary source of L2 speakers' communication problems is insufficient processing time, *stalling strategies* (e.g., the use of lexicalized pause-fillers and hesitation gambits) that help speakers gain time to think and keep the communication channel open are also problem-solving strategies—a point also mentioned by several other researchers (e.g., Canale, 1983; Rost, 1994; Rubin, 1987; Savignon, 1983). Psycholinguistics and, to a lesser extent, L2 research have extensively studied such stalling phenomena and the temporal organization of communication in general (e.g., Váradi, 1993; for a

review, see Griffiths, 1991), but these efforts have not been integrated into mainstream CS research. In Tarone's (1980) framework, pause fillers would fall under production rather than communication strategies, the difference being that production strategies "are not used for the *primary* purpose of negotiating meaning" (p. 420). Færch and Kasper (1983c) considered pause fillers temporal variables rather than strategic devices.

Dörnyei and Scott's extended view. In an attempt to integrate several lines of previous research, Dörnyei and Scott (1995a, 1995b) further extended the scope of CSs to include every potentially intentional attempt to cope with any language-related problem of which the speaker is aware during the course of communication. This conceptualization aimed at covering all the different types of communication problem-management mechanisms discussed in the L2 literature. Indeed, Dörnyei and Scott explicitly conceived "communication strategies" to be the key units in a general description of problem-management in L2 communication.

Canale's extended concept. Canale (1983) offered the broadest extension of the concept of "communication strategy". He proposed that CSs involve any attempt to "enhance the effectiveness of communication (e.g., deliberately slow and soft speech for rhetorical effect)" (p. 11; cf. Savignon, 1983). This definition is broader than the restriction of CSs to problem-solving devices—therefore going beyond all the approaches discussed above—but the meaning potential of "strategies in communication" does not exclude such an extension. Although originally a military term, *strategy* in general use has come to refer to the implementation of a set of procedures for accomplishing something; Bialystok (1990) defined this use of the term as "wilful planning to achieve explicit goals" (p. 1). Thus, a *communication strategy* in the most general sense is a plan of action to accomplish a communication goal; the enhancement of communication effect is certainly such a goal. An example of the broader interpretation of "strategy" surfaces in L1 communication studies, where CS research has focused on ways of achieving "critical social goals such as gaining compliance, generating affinity, resolving social conflict, and offering information" (Wiemann & Daly, 1994, p.

vii; for review: Daly & Wiemann, 1994). Similarly, methods to manage potentially difficult discourse situations (e.g., how to interrupt someone, how to hold the floor, or how to close a conversation) are also communication-enhancing strategies.

Psychological approaches to conceptualizing CSs. The different conceptualizations described above share one thing: namely, they follow a primarily linguistic approach to defining CSs. However, other researchers, particularly Bialystok (1990) and the Nijmegen Group (i.e., Bongaerts, Kellerman, and Poulisse), took an entirely different approach. Although their definition of CSs was similar to Færch and Kasper's (1983b), they argued that CSs are inherently mental procedures; therefore, CS research should investigate the cognitive processes underlying strategic language use. They claimed that not understanding the cognitive psychological and psycholinguistic dimensions of CS use, and focusing only on the surface verbalizations of underlying psychological processes, would lead to taxonomies of doubtful validity. Indeed, the proliferation of "different" product-oriented classifications in strategy research (see below) underscores Bialystok's and the Nijmegen Group's argument. In Kellerman's (1991) conclusion,

> the systematic study of compensatory strategies has not been properly served by the construction of taxonomies of strategy types which are identified on the basis of variable and conflicting criteria which confound grammatical form, incidental and inherent properties of referents, and encoding medium with putative cognitive processes. This inconsistency has led to a proliferation of strategy types with little regard for such desirable requirements as psychological plausibility, parsimony and finiteness. (p. 158)

Instead of conducting product-oriented research, Bialystok and the Nijmegen Group recommended CS research adopt a new analytic perspective, focusing on the cognitive "deep structure" of strategic language behavior. Yule and Tarone (in press) summarize the duality of approaches taken by researchers—the "Pros" following the traditional approach and the "Cons" taking a primarily psychological stance—as follows:

> The taxonomic approach of the Pros focuses on the descriptions of the language produced by L2 learners, essentially characterizing the means used to accomplish reference in terms of the observed form. It is primarily a description of observed forms in L2 output, with implicit inferences being made about the differences in the psychological processing that produced them. The alternative approach of the Cons focuses on a description of the psychological processes used by L2 learners, essentially characterizing the cognitive decisions humans make in order to accomplish reference. It is primarily a description of cognitive processing, with implicit references being made about the inherent similarity of linguistically different forms observed in the L2 output.

Poulisse's speech-production model. A follow-up to Bialystok's and the Nijmegen group's approach to place CSs in a parsimonious cognitive framework was Poulisse's (1993) conceptualization of CSs within a coherent model of speech production. In fact, Færch and Kasper (1983b) had also attempted this 10 years earlier. However, Poulisse had access to Levelt's (1989) model of speech production, which allowed more detailed psycholinguistic analysis of strategic language behavior than was possible before. Accordingly, Poulisse reconsidered some aspects of her earlier work as part of the Nijmegen Group and came up with a modified process-oriented cognitive taxonomy (see below).

In sum, researchers have generally agreed with Bialystok's (1990) statement that "communication strategies are an undeniable event of language use, their existence is a reliably documented aspect of communication, and their role in second-language communication seems particularly salient" (p. 116). However, CS research is divided by the various theoretical perspectives adopted: Færch and Kasper (1983b) considered CSs verbal plans within a speech production framework; Tarone (1980) viewed them from a discourse analytical perspective and pursued an interactional approach; Dörnyei (1995) extended the scope of their definition to include devices that were not strictly meaning-related; Dörnyei and Scott (1995a, 1995b) equated strategic lan-

guage use with communication problem-solving behavior in general; Canale (1983) proposed to include non-problem-solving strategies as well; Bialystok (1990) and the Nijmegen Group regarded CSs as primarily mental events and adopted a cognitive-psychological approach to their analysis; and finally Poulisse (1993, in press-b) further developed the psycholinguistic perspective by integrating CSs in an adapted version of Levelt's (1989) speech production framework.

To arrive at a better understanding of why CSs have elicited such diverse approaches, we look closer at the defining criteria for "communication strategies" used in the published literature.

Defining CSs

A review of the CS literature reveals that two defining criteria are consistently mentioned, *problem-orientedness* and *consciousness*. Although they appear to capture the essence of strategic language behavior, their lack of explicitness has partly caused the diversity in CS research.

Problem-orientedness

As we have already discussed, "the original insight into CSs was based on a mismatch between communicative intention and linguistic resources" (Váradi, 1992, p. 437); that is, CSs were seen as language devices used to overcome communication problems related to interlanguage deficiencies. Thus, *problem-orientedness*—or in Bialystok's (1984, 1990) term, 'problematicity'—has become a primary defining criterion for CSs, referring to "the idea that strategies are used only when a speaker perceives that there is a problem which may interrupt communication" (Bialystok, 1990, p. 3). This undoubtedly key feature of strategic language behavior is mentioned in most studies on CSs. However, as Dörnyei and Scott (1995a, 1995b) argued, problem-orientedness in general is not specific enough; it leaves undefined the exact *type of the problem*, an area where various approaches show considerable divergence.

Originally CSs were thought to handle only one type of language problem, *resource deficits*—gaps in speakers' knowledge preventing them from verbalizing messages. This restriction to one set of problems, however, was not reflected in the name given to these language devices (i.e., "communication strategy"). Hence, there developed a mismatch between the specificity of the speech phenomena to which CSs originally referred and the broadness of the term "communication strategy." Consequently, several researchers extended the term to handle the following three types of communication problems as well:

1. *Own-performance problems*: the realization that something one has said is incorrect or only partly correct; associated with various types of self-repair, self-rephrasing and self-editing mechanisms (e.g., Dörnyei & Scott, 1995a, 1995b; Savignon, 1983; Tarone, 1980; Tarone & Yule, 1987; Willems, 1987).

2. *Other-performance problems*: something perceived as problematic in the interlocutor's speech, either because it is thought to be incorrect (or highly unexpected), or because of a lack (or uncertainty) of understanding something fully; associated with various meaning negotiation strategies (e.g., Canale, 1983; Dörnyei & Thurrell, 1992, 1994; Dörnyei & Scott, 1995a, 1995b; Rost, 1994; Rost & Ross, 1991; Rubin, 1987; Savignon, 1983; Willems, 1987).

3. *Processing time pressure*: the L2 speaker's frequent need for more time to process and plan L2 speech than would be naturally available in fluent communication; associated with strategies such as the use of fillers, hesitation devices, and self-repetitions (e.g., Canale, 1983; Chen, 1990; Dörnyei, 1995; Dörnyei & Scott, 1995a, 1995b; Dörnyei & Thurrell, 1991, 1992, 1994; Haastrup & Phillipson, 1983; Rost, 1994; Rubin, 1987; Savignon, 1972, 1983; Tarone & Yule, 1987).

Consciousness

A "strategy" being a conscious technique used to achieve a goal, *consciousness*, therefore, has been the second major defining crite-

rion for CSs. The main problem with using consciousness in this context, however, is that to speak about CSs being "consciously used devices" mixes several meanings of the term. One can be conscious of a language problem, the intent/attempt to solve this problem, the repertoire of potentially applicable CSs, the way a CS may achieve its effect, the alternative plan, the execution of the CS, the use of a less-than-perfect "stopgap" device (i.e., the CS), or the use of a CS when brought to the learner's attention later.

"Consciousness" has, in fact, so many different connotations that one would best avoid it altogether. Schmidt (1994), when discussing consciousness in language attainment, recommended that the term should be deconstructed into several aspects. He suggested four basic senses of consciousness: *intentionality*, *attention*, *awareness*, and *control*. Bialystok (1990) also separated consciousness from *intentionality*, which she defined as the "learner's control over a repertoire of strategies so that particular ones may be selected from the range of options and deliberately applied to achieve certain effects" (p. 5).

A second problem with consciousness relates to Færch and Kasper's (1983b) argument that "consciousness is perhaps more a matter of degree than either-or" (p. 35), reflecting the hierarchical organization of plans and the fact that in most cases a speaker consciously selects only certain elements in a plan. In addition, as Gass and Selinker (1994) pointed out, a central feature of language use is a tendency to automatize high-frequency elements; therefore, the small set of strategies people use in the numerous problem-situations they encounter can become routinized. In Wiemann and Daly's (1994) words, some strategies "are overlearned and seem to drop from consciousness" (p. ix). That is, what was originally an intentional strategy may become in certain situations and/or with certain individuals a highly automatized or fossilized—hence not fully conscious—device.

Drawing on the work of the researchers mentioned above, Dörnyei and Scott (1995a, 1995b) argued that three aspects of consciousness are particularly relevant to CSs:

1. *Consciousness as awareness of the problem*. Only those instances of problem-related language use which are related to language processing problems that the speaker consciously recognizes as such should be termed CSs in order to distinguish mistakes and CSs that may have a similar erroneous form (e.g., "typer" used as an incorrectly learnt word or as a conscious attempt to form a noun from "type", usually considered to be word-coinage).

2. *Consciousness as intentionality*. The speaker's intentional use of the CS separates CSs from certain verbal behaviors that are systematically related to problems of which the speaker is aware but that are not done intentionally. (E.g., with non-lexicalized filled pauses, "umming and erring", the speaker is usually aware of the difficulty faced, but uses these devices most of the time without a conscious decision.)

3. *Consciousness as awareness of strategic language use*. The speaker realizes that he/she is using a less-than-perfect, stopgap device or is doing a problem-related detour on the way to mutual understanding. This separates CSs from cases when, even if intentionally doing something to overcome a recognized problem, the speaker may not consider the final product a strategy but rather a piece of acceptable L2. (E.g., for many L2 speakers 'literal translation' is a regular part of the L2 production process, resulting in many good solutions; we would not count these as cases of CS use.)

Dörnyei and Scott, however, claimed that a fourth important aspect of consciousness, *consciousness as control*, should not necessarily be a defining criterion of CSs; an automatized strategy can be considered a CS proper, particularly because one purpose of CS training is to enhance automatization (Dörnyei, 1995). This is, in fact, analogous to the practice adopted by Færch and Kasper (1983b), who on similar grounds included the phrase "potentially conscious" in their definition of CSs.

Conceptual Definition

Researchers generally agree that the main purpose of CS use is to manage communication problems. The only exception, Canale (1983), extended the scope of CSs to include communication-enhancing devices. As pointed out earlier, the meaning potential of "strategy" allows such a broad interpretation; however, we believe that communication-enhancing strategies conceptualized thus broadly are not problem-solving devices proper and should be treated separately. Extending a distinction made by Long (1983): These strategies are used to *avoid* conversational trouble or failure in communication goal-attainment, in contrast to devices applied to "repair the discourse when trouble occurs" (p. 131), offering "spontaneous solutions to immediate, short-term problems" (p. 132)[1]. The vast majority of the CS literature is concerned only with the devices belonging to the second type, that is, with the management of actual language-related problems in communication.

With respect to problem-orientedness, the extension of the original conceptualization of CSs, which concerned only one problem type (handling insufficient language resources), appears valid in that it maintains the basic criterion of problem-orientedness. However, it results in the term's covering a more heterogeneous set of speech phenomena. Clearly, whether or not researchers have labelled devices not strictly related to resource deficits as "communication strategies" has been a matter of terminological decision, very much depending on one's priorities: Studies following the traditional conceptualization have limited "communication strategy" to a fairly homogeneous set of language phenomena related to speech production; in contrast, researchers primarily concerned with general problem-management in communication have used the term to cover the handling of a wider range of communication problems.

It is difficult to posit clear-cut criteria with respect to consciousness, because we lack a clear understanding of the role of consciousness within speech production, particularly in light of the frequent and significant automatization of certain elements/

subprocesses in language processing. However, one cannot altogether avoid taking certain aspects of consciousness into account in defining CSs, because problem-orientedness in itself is an insufficient criterion of strategic language use. Dörnyei and Scott (1995a, 1995b), offered relatively elaborate and straightforward consciousness criteria. They argued that a problem-solving device is a strategy only if it is conscious in three aspects: consciousness as awareness of the problem, consciousness as intentionality, and consciousness as awareness of strategic language use.

Inventory and Classifications of Communication Strategies

The conceptual differences among CS researchers surface most explicitly when they specify the actual language devices they consider to be CSs. Accordingly, the list of strategies and their taxonomies in different studies on CSs vary significantly. In this section we pull together all the main language devices mentioned in the literature under the label "communication strategy". Then we present nine different taxonomies of CSs, by Tarone (1977), Færch and Kasper (1983b), Bialystok (1983), Bialystok (1990), Paribakht (1985), Willems (1987), the Nijmegen Group (based on Poulisse, 1987; Kellerman, 1991), Poulisse (1993), and finally Dörnyei and Scott (1995a, 1995b).

Table 1 contains an inventory of strategic language devices with descriptions/definitions, examples, and, in some cases, retrospective comments by the speaker. The list is based on Dörnyei and Scott (1995a, 1995b); we have indicated in a special column whether a particular strategy was included in any of the other 8 taxonomies, although sometimes under a different name. We have included explanatory notes about some of the less-known strategies.

Table 2 contains a summary of the 9 taxonomies from Table 1. The first thing that becomes obvious when comparing the classifications is that they concern various ranges of language devices in different degrees of elaborateness. On one end of the narrow-broad continuum are the typologies of the Nijmegen Group and Poulisse (1993), who explicitly restricted the scope of language

Table 1

Inventory of Strategic Language Devices with Descriptions/Definitions, Examples (Based on Dörnyei & Scott, 1995a,1995b), and Indications Whether They Were Included in Any Other Taxonomies (T=Tarone, 1977; F&K=Færch & Kasper, 1983b; B=Bialystok, 1983; P=Paribakht, 1985; W=Willems, 1987; N=Nijmegen Group)

STRATEGY	DESCRIPTION	EXAMPLE	OTHER TAXONOMIES
1. Message abandonment	Leaving a message unfinished because of some language difficulty.	*It is a person er... who is responsible for a a house, for the block of house... I don't know... [laughter]*	T, F&K, W
2. Message reduction (topic avoidance)	Reducing the message by avoiding certain language structures or topics considered problematic languagewise or by leaving out some intended elements for a lack of linguistic resources.	[Retrospective comment by the speaker:] *I was looking for "satisfied with a good job, pleasantly tired," and so on, but instead I accepted less.*	T, F&K, W
3. Message replacement	Substituting the original message with a new one because of not feeling capable of executing it.	[Retrospective comment after saying that the pipe was broken *in the middle* instead of "the screw thread was broken":] *I didn't know "screw thread" and well, I had to say something.*	F&K, W
4. Circumlocution (paraphrase)	Exemplifying, illustrating or describing the properties of the target object or action.	*it becomes water* instead of "melt"	T, F&K, W, P; B: "description"; N: appr. "analytic strategies"
5. Approximation	Using a single alternative lexical item, such as a superordinate or a related term, which shares semantic features with the target word or structure.	*plate* instead of "bowl"	T, W; B and P: "semantic contiguity"; F&K: "generalization"; N: appr. "holistic str."
6. Use of all-purpose words	Extending a general, "empty" lexical item to contexts where specific words are lacking.	The overuse of *thing, stuff, make, do,* as well as words like *thingie, what-do-you-call-it*; e.g.: *I can't can't work until you repair my ... thing.*	W: "smurfing"

7. Word-coinage	Creating a non-existing L2 word by applying a supposed L2 rule to an existing L2 word.	[Retrospective comment after using *dejunktion* and *unjunktion* for "street clearing":] *I think I approached it in a very scientific way: from 'junk' I formed a noun and I tried to add the negative prefix "de-"; to "unjunk" is to 'clear the junk' and "unjunktion" is 'street clearing'.*	T, F&K, B, W; N: appr. "morphological creativity"
8. Restructuring	Abandoning the execution of a verbal plan because of language difficulties, leaving the utterance unfinished, and communicating the intended message according to an alternative plan.	On Mickey's face we can see the... so he's he's he's wondering.	F&K; W: under "self-repair"
9. Literal translation (transfer)	Translating literally a lexical item, an idiom, a compound word or structure from L1/L3 to L2.	I'd made a big fault [translated from French]	T, W, N; F&K: under "interlingual transfer"; P and B: "transliteration"
10. Foreignizing	Using a L1/L3 word by adjusting it to L2 phonology (i.e., with a L2 pronunciation) and/or morphology.	reparate for "repair" [adjusting the German word 'reparieren']	B, W; F&K: under "interlingual transfer"; N: under "transfer"
11. Code switching (language switch)	Including L1/L3 words with L1/L3 pronunciation in L2 speech; this may involve stretches of discourse ranging from single words to whole chunks and even complete turns.	Using the Latin *ferrum* for "iron".	T, F&K, B, W; N: under "transfer"
12. Use of similar-sounding words[1]	Compensating for a lexical item whose form the speaker is unsure of with a word (either existing or non-existing) which sounds more or less like the target item.	[Retrospective comment explaining why the speaker used *cap* instead of "pan":] *Because it was similar to the word which I wanted to say: "pan".*	
13. Mumbling[1]	Swallowing or muttering inaudibly a word (or part of a word) whose correct form the speaker is uncertain about.	And uh well Mickey Mouse looks surprise or sort of XXX [the 'sort of' marker indicates that the unintelligible part is not just a mere recording failure but a strategy].	
14. Omission[1]	Leaving a gap when not knowing a word and carrying on as if it had been said.	*then... er... the sun is is... hm sun is... and the Mickey Mouse....* [Retrospective comment: *I didn't know what 'shine' was*.]	
15. Retrieval	In an attempt to retrieve a lexical item saying a series of incomplete or wrong forms or structures before reaching the optimal form.	*It's brake er... it's broken broked broke.*	F&K

Table 1 (continued)

Inventory of Strategic Language Devices with Descriptions/Definitions, Examples (Based on Dörnyei & Scott, 1995a,1995b), and Indications Whether They Were Included in Any Other Taxonomies (T=Tarone, 1977; F&K=Færch & Kasper, 1983b; B=Bialystok, 1983; P=Paribakht, 1985; W=Willems, 1987; N=Nijmegen Group)

STRATEGY	DESCRIPTION	EXAMPLE	OTHER TAXONOMIES
16a. Self-repair	Making self-initiated corrections in one's own speech.	*then the sun shines and the weather get be... gets better.*	W
16b. Other-repair	Correcting something in the interlocutor's speech.	Speaker:... *because our tip went wrong...* [...] Interlocutor: *Oh, you mean the tap.* S: *Tap, tap...*	
17. Self-rephrasing[2]	Repeating a term, but not quite as it is, but by adding something or using paraphrase.	*I don't know the material...what it's made of...*	(Tarone & Yule, 1987)
18. Over-explicitness (waffling)[3]	Using more words to achieve a particular communicative goal than what is considered normal in similar L1 situations.	(This CS was not included in Dörnyei & Scott's , 1995a, 1995b, taxonomy)	(Tarone & Yule, 1987)
19. Mime (nonlinguistic/ paralinguistic strategies)	Describing whole concepts nonverbally, or accompanying a verbal strategy with a visual illustration.	[Retrospective comment:] *I was miming here, to put it out in front of the house, because I couldn't remember the word.*	T, F&K, B, P, W; N: under either "analytic" or "holistic strategies"
20. Use of fillers[4]	Using gambits to fill pauses, to stall, and to gain time in order to keep the communication channel open and maintain discourse at times of difficulty.	Examples range from very short structures such as *well*; *you know*; *actually*; *okay*, to longer phrases such as *this is rather difficult to explain*; *well, actually, it's a good question.*	
21a. Self-repetition[5]	Repeating a word or a string of words immediately after they were said.	[Retrospective comment:] *I wanted to say that it was made of concrete but I didn't know 'concrete' and this is why "which was made, which was made" was said twice.*	(Tarone & Yule, 1987)
21b. Other-repetition	Repeating something the interlocutor said to gain time.	Interlocutor: *And could you tell me the diameter of the pipe? The diameter.* Speaker: *The diameter? It's about er... maybe er... five centimeters.*	

22. Feigning understanding[6]	Making an attempt to carry on the conversation in spite of not understanding something by pretending to understand.	Interlocutor: *Do you have the rubber washer?* Speaker: *The rubber washer? ... No I don't.* [Retrospective comment: *I didn't know the meaning of the word, and finally I managed to say I had no such thing.*]	
23. Verbal strategy markers[7]	Using verbal marking phrases before or after a strategy to signal that the word or structure does not carry the intended meaning perfectly in the L2 code.	E.g.: (strategy markers in bold): (a) marking a circumlocution: *On the next picture...* **I don't really know what's it called in English**... *it's uh this kind of bird that... that can be found in a clock that strikes out or [laughs] comes out when the clock strikes*; (b) marking approximations: *it's some er... it's* **some kind of** *er... paper*; (c) marking foreignizing: *... a panel [with an English accent],* **I don't know whether there's a name in English or not** *[laughter] just it's a panel flat*; (d) marking literal translation: *it's er... a smaller medium flat and in,* **we call them** *blockhouse, but it's not it's not made of blocks*; (e) marking code switching: *the bird from the clocks come out and say "kakukk"* **or I don't know what**; see also the example for message abandonment.	
24a. Direct appeal for help	Turning to the interlocutor for assistance by asking an explicit question concerning a gap in one's L2 knowledge.	*it's a kind of old clock so when it strucks er... I don't know, one, two, or three 'clock then a bird is coming out. What's the name?*	T, F&K, W
24b. Indirect appeal for help	Trying to elicit help from the interlocutor indirectly by expressing lack of a needed L2 item either verbally or nonverbally.	*I don't know the name...* [rising intonation, pause, eye contact]	T, F&K, W
25. Asking for repetition	Requesting repetition when not hearing or understanding something properly.	*Pardon? What?*	
26. Asking for clarification	Requesting explanation of an unfamiliar meaning structure.	*What do you mean?*, *You saw what?* Also 'question repeats,' that is, echoing a word or a structure with a question intonation.	W
27. Asking for confirmation	Requesting confirmation that one heard or understood something correctly.	Repeating the trigger in a 'question repeat' or asking a full question, such as *You said...?*, *You mean...?*, *Do you mean...?*	W
28. Guessing	Guessing is similar to a confirmation request but the latter implies a greater degree of certainty regarding the key word, whereas guessing involves real indecision.	E.g.: *Oh. It is then not the washing machine. Is it a sink?*	

Table 1 (continued)

Inventory of Strategic Language Devices with Descriptions/Definitions, Examples (Based on Dörnyei & Scott, 1995a,1995b), and Indications Whether They Were Included in Any Other Taxonomies (T=Tarone, 1977; F&K=Færch & Kasper, 1983b; B=Bialystok, 1983; P=Paribakht, 1985; W=Willems, 1987; N=Nijmegen Group)

STRATEGY	DESCRIPTION	EXAMPLE	OTHER TAXONOMIES
29. Expressing non-understanding	Expressing that one did not understand something properly either verbally or nonverbally.	Interlocutor: *What is the diameter of the pipe?* Speaker: *The diameter?* I: *The diameter.* S: *I don't know this thing.* I: *How wide is the pipe?* Also, puzzled facial expressions, frowns and various types of mime and gestures.	
30. Interpretive summary	Extended paraphrase of the interlocutor's message to check that the speaker has understood correctly.	*So the pipe is broken, basically, and you don't know what to do with it, right?*	W
31. Comprehension check	Asking questions to check that the interlocutor can follow you.	*And what is the diameter of the pipe? The diameter. Do you know what the diameter is?*	W
32. Own-accuracy check	Checking that what you said was correct by asking a concrete question or repeating a word with a question intonation.	*I can see a huge snow... snowman? snowman in the garden.*	
33a. Response: repeat	Repeating the original trigger or the suggested corrected form (after an other-repair).	See the example of other-repair.	
33b. Response: repair	Providing other-initiated self-repair.	Speaker: *The water was not able to get up and I...* Interlocutor: *Get up? Where?* S: *Get down.*	
33c. Response: rephrase	Rephrasing the trigger.	Interlocutor: *And do you happen to know if you have the rubber washer?* Speaker: *Pardon?* I: *The rubber washer... it's the thing which is in the pipe.*	
33d. Response: expand	Putting the problem word/issue into a larger context.	Interlocutor: *Do you know maybe er what the diameter of the pipe is?* Speaker: *Pardon?* I: *Diameter, this is er maybe you learnt mathematics and you sign er with th this part of things.*	
33e. Response: confirm	Confirming what the interlocutor has said or suggested.	Interlocutor: *Uh, you mean under the sink, the pipe? For the...* Speaker: *Yes. Yes.*	

33f. Response: reject	Rejecting what the interlocutor has said or suggested without offering an alternative solution.	Interlocutor: *Is it plastic?* Speaker: *No.*

[1]Dörnyei and Scott (1995a, 1995b) first discussed these three strategies; they are stop-gap devices whose use is motivated by the assumption that the over-determined, redundant nature of language normally allows the listener to guess the incomplete or missing word from the context, much as in a cloze or a C-test. For this reason, these strategies are not merely instances of message reduction or abandonment. Dörnyei and Scott found few unambiguous examples of these strategies in their corpus but, for example, mumbling is very common in languages with complex verb conjugation systems, where the speaker often swallows the conjugation suffix about which he/she is uncertain.

[2]Tarone and Yule (1987) first identified this strategy. They assumed that it was used with non-native listeners for whom the speaker wants to make the task easier. In Dörnyei and Scott's (1995a, 1995b) investigation, however, the listener's (that is, the interviewer's) L2 competence was superior to the speaker's; that such strategies were still used points to their more general applicability. As the retrospection extract demonstrates, self-repetition is related to over-explicitness, stemming from speakers' uncertainty about whether their L2 language use expresses their meaning closely enough.

[3]Tarone and Yule (1987) first identified this strategy as a CS but Blum-Kulka and Olshtain (1986) also discussed the language phenomenon; Edmondson and House (1991) call it "waffling", defining it as "excessive use of linguistic forms to fill a specific discourse 'slot' or 'move'" (p. 273); they suggested that it is caused by speakers' insecurity about their L2 ability as well as by not having access to standardized routines or phrases.

[4]Fillers make up a broad category, including words and phrases used to fill pauses, cover for hesitations, gain time, and provide smooth transformation in breakdowns. Rohde (1985) talked about the function of such gambits as "safe islands" (pp. 48–49) onto which the speaker can jump when experiencing problems, which very aptly describes a core feature of fillers. On the other hand, fillers also fulfill a number of subtle discourse roles (see Edmondson & House, 1981; Færch & Kasper, 1984b), some of which are definitely not problem-oriented; hence, it is difficult to tell the strategic and non-strategic uses apart.

[5]Tarone and Yule (1987) pointed out that research has paid little attention to a very common interlanguage phenomenon, the frequent repetitions of words or whole structures and clauses. They argue that repetitions are CSs used for two purposes: (a) to stall, and (b) to provide the listener with another chance to hear and process the information. Chen (1990) emphasized the "communication maintenance" function of repetition in Chinese students' use of English: "Only one avoidance strategy was used by one low-proficiency learner. The learners would rather carry on the communication task by repeating what they had said than avoid the communication task" (p. 174).

Table 1 (continued)
Inventory of Strategic Language Devices with Descriptions/Definitions, Examples (Based on Dörnyei & Scott, 1995a,1995b), and Indications Whether They Were Included in Any Other Taxonomies (T=Tarone, 1977; F&K=Færch & Kasper, 1983b; B=Bialystok, 1983; P=Paribakht, 1985; W=Willems, 1987; N=Nijmegen Group)

[6]Wong-Fillmore (1979) and Aston (1986) highlighted feigning understanding as an important communication maintenance strategy that allows the speaker to remain in the conversation regardless of a lack of understanding of what the other said.

[7]Discussing code switching, Harper (1985) distinguished two types, one where the speaker signals to the interlocutor that a CS is coming "as if to enclose the borrowed item in inverted commas" (p. 91), and another that "does not prepare the micro-context into which the borrowed item will be introduced" (p. 91). Similarly, Clark (1994) wrote about "editing terms" (e.g., "you know" and "I mean", p. 249), which speakers use to prepare the interlocutor for a repair, and "hedges" (e.g., "kind of", "sort of", and "like") they use to indicate that they are being less accurate and to "prevent interpreting certain words or phrases too precisely, too literally" (p. 250). This latter, broad conceptualization of "hedges" is analogous to Dörnyei and Scott's (1995a, 1995b) conception of "strategy markers," referring to any warning signals or "verbal inverted commas" whose function is to indicate to the interlocutor that a strategy is used (i.e., that a word/phrase does not carry the intended meaning perfectly), eliciting attentive cooperation and thereby helping to achieve shared meaning and integration of the less-than-perfect interlanguage structure into the L2.

phenomena examined to lexical-compensatory strategies (i.e., devices used to compensate for missing lexical items; see Kellerman, 1991, for a rationale). On the other end of the continuum is Dörnyei and Scott's (1995a, 1995b) system, which concerns L2 problem-management in general.

Although the terminologies used and their levels of specificity vary a great deal, the corresponding parts of 6 of the 9 taxonomies (by Bialystok, 1983; Dörnyei & Scott, 1995a, 1995b; Færch & Kasper, 1983b; Paribakht, 1985; Tarone, 1977; and Willems, 1987) show many similarities. Bialystok (1990) expressed this basic convergence around similar concepts when she remarked that:

> the variety of taxonomies proposed in the literature differ primarily in terminology and overall categorizing principle rather than in the substance of the specific strategies. If we ignore, then, differences in the structure of the taxonomies by abolishing the various overall categories, then a core group of specific strategies that appear consistently across the taxonomies clearly emerges. (p. 61)

Three of the 9 taxonomies (Færch & Kasper, 1983b; Tarone, 1977; Willems, 1987) recognize a basic duality in strategy use: strategies are used either (a) to tailor one's message to one's resources by altering, reducing, or completely abandoning the original content; or (b) to try and convey the intended message in spite of the linguistic deficiencies by extending or manipulating the available language system. Váradi (1973) and Færch and Kasper (1983b) termed strategies belonging to the first option "reduction strategies" and Tarone (1977) called them "avoidance strategies;" Corder (1981), who pointed out that they could also be labelled "risk-avoidance strategies," preferred "message adjustment strategies." Færch and Kasper (1983b) termed strategies belonging to the second option "achievement strategies"; Corder (1981) called them "resource expansion strategies" and considered them "risk-taking strategies" because by using them the speaker ventures beyond "playing it safe" and takes a certain risk of not being able to convey the message. Dörnyei and Scott (1995a, 1995b) also implicitly recognize the achievement-reduction dual-

Table 2

Various Taxonomies of Communication Strategies

Tarone (1977)	**Færch & Kasper (1983b)**	**Bialystok (1983)**	**Paribakht (1985)**	**Willems (1987)**
AVOIDANCE Topic avoidance Message abandonment PARAPHRASE Approximation Word coinage Circumlocution CONSCIOUS TRANSFER Literal translation Language switch APPEAL FOR ASSISTANCE MIME	FORMAL REDUCTION Phonological Morphological Syntactic Lexical FUNCTIONAL REDUCTION Actional red. Modal red. Reduction of propositional content -Topic avoidance -Message abandonment -Meaning replacement ACHIEVEMENT STRATEGIES *Compensatory strategies* -Code switching -Interlingual transfer -Inter-/ intralingual transfer - IL based strategies * Generalization * Paraphrase * Word coinage * Restructuring -Cooperative strategies -Non-linguistic strategies *Retrieval strategies*	L1-BASED STRATEGIES Language switch Foreignizing Tr ansliteration L2-BASED STRATEGIES Semantic contiguity Description Word coinage NON-LINGUISTIC STRATEGIES	LINGUISTIC APPROACH *Semantic contiguity* -Superordinate -Comparison * Positive comparison Analogy Syno nymy * Negative comparison Contrast & opposit. Antonymy *Circumlocution* -Physical description * Size * Shape * Color * Material - Constituent features * Features * Elaborated features -Locational property -Historical property - Other features -Functional description *Metalinguistic clues* CONTEXTUAL APPROACH Linguistic context Use of L2 idioms and proverbs Transliteration of L1 idioms and proverbs Idiomatic transfer CONCEPTUAL APPROACH Demonstration Exemplification Metonymy MIME Replacing verbal output Accompanying verbal output	REDUCTION STRATEGIES Formal reduction -Phonological -Morphological -Syntactic -Lexical Functional reduction -Message abandonment -Meaning replacement -Topic avoidance ACHIEVEMENT STRATEGIES Paralinguistic strategies Interlingual strategies -Borrowing/code switching -Literal translation -Foreignizing Intralingual strategies -Approximation -Word coinage - Paraphrase * Description * Circum-locution * Exemplifi-cation - Smurfing - Self-repair -Appeals for assistance * Explicit * Implicit * Checking questions -Initiating repair

Table 2 (continued)

Various Taxonomies of Communication Strategies

Bialystok (1990)	**Nijmegen Group**	**Poulisse (1993)**	**Dörnyei & Scott (1995a, 1995b)**
ANALYSIS-BASED STRATEGIES CONTROL-BASED STRATEGIES	CONCEPTUAL STRATEGIES Analytic Holistic LINGUISTIC/ CODE STRATEGIES Morphological creativity Tran sfer	SUBSTITUTION STRATEGIES SUBSTITUTION PLUS STRATEGIES RECONCEPTU-ALIZATION STRATEGIES	DIRECT STRATEGIES *Resource deficit-related strategies* * Message abandonment * Message reduction * Message replacement * Circumlocution * Approximation * Use of all-purpose words * Word-coinage * Restructuring * Literal translation * Foreignizing * Code switching * Use of similar sounding words * Mumbling * Omission * Retrieval * Mime *Own-performance problem-related strategies* * Self-rephrasing * Self-repair *Other-performance problem-related strategies* * Other-repair INTERACTIONAL STRATEGIES *Resource deficit-related strategies* * Appeals for help *Own-performance problem-related strategies* * Comprehension check * Own-accuracy check *Other-performance problem-related strategies* * Asking for repetition * Asking for clarification * Asking for confirmation * Guessing * Expressing nonunderstanding * Interpretive summary * Responses INDIRECT STRATEGIES *Processing time pressure-related strategies* * Use of fillers * Repetitions *Own-performance problem-related strategies* * Verbal strategy markers *Other-performance problem-related strategies* * Feigning understanding

ity, whereas the rest of the taxonomies cover only achievement strategies.

Apart from the reduction-achievement distinction, the organizing principles in 5 taxonomies (Bialystok, 1983; Færch & Kasper, 1983b; Paribakht, 1985; Tarone, 1977; and Willems, 1989) primarily rest on certain properties of the language devices concerned (e.g., the role of the L1 or the type of knowledge utilized in CS realization). Bialystok and the Nijmegen Group considered the kind of descriptive categories found in these taxonomies psychologically unfounded and often over-detailed, claiming that they "artificially carve up what are in fact unitary operations" (Kellerman & Bialystok, in press; see below for more details). Four taxonomies (Bialystok, 1990; Dörnyei & Scott, 1995a, 1995b; the Nijmegen Group; Poulisse, 1993) follow different organization principles, which will be discussed below.

Dörnyei and Scott's taxonomy. In their extended taxonomy of problem-solving strategies, Dörnyei and Scott (1995a, 1995b) first classified the strategies according to the manner of problem-management; that is, how CSs contribute to resolving conflicts and achieving mutual understanding. They separated 3 basic categories, *direct*, *indirect*, and *interactional strategies*. Direct strategies provide an alternative, manageable, and self-contained means of getting the (sometimes modified) meaning across, like circumlocution compensating for the lack of a word. Most traditionally identified CSs fall under this category. Indirect strategies, on the other hand, are not strictly problem-solving devices. They do not provide alternative meaning structures, but rather facilitate the conveyance of meaning indirectly by creating the conditions for achieving mutual understanding: preventing breakdowns and keeping the communication channel open (e.g., using fillers or feigning understanding) or indicating less-than-perfect forms that require extra effort to understand (using strategy markers or hedges). Although indirect strategies are not meaning-related, they play a significant role in problem-management and therefore—if the term "communication strategy" is used in an extended sense—are a valid subcategory of CSs.

Similarly, some language-learning strategy classifications (e.g., Oxford, 1990) include indirect learning strategies, whose function is to "manage and support learning without (in many instances) directly involving the target language" (p. 135). However, we must note that including indirect strategies is an equivocal, and contested judgment. Interactional strategies involve a third approach, whereby the participants carry out trouble-shooting exchanges cooperatively (e.g., appeal for and grant help, or request for and provide clarification), and therefore mutual understanding is a function of the successful execution of both pair parts of the exchange.

Dörnyei and Scott (1995a, 1995b), then, relate the 3 main categories (direct, indirect, and interactional) to the 4 types of communication problems already discussed (resource deficit, processing time pressure, own-performance problems, other-performance problems). resulting in a 3–by–4 matrix not every cell of which is filled. (There are no direct and interactional processing time pressure-related strategies, nor indirect resource deficit-related strategies.)

The Nijmegen Group's taxonomy. The Nijmegen Group's—and similarly, Bialystok's (Bialystok & Kellerman, 1987)—main problem with previous taxonomies was, according to Poulisse (1994), that "they are insufficiently related to theories of language use or development, so that studies which adopt them cannot provide much insight into the cognitive processes underlying CS use. . . . There are so many different CS types that generalizations are easily missed" (p. 620). Instead of the existing product-oriented taxonomies, their aim was to produce a context-free, process-based taxonomy of CSs that met three basic requirements: (a) parsimony—the fewer categories the better; (b) generalizability—independence of variation across speakers, tasks, languages, and proficiency levels; and (c) psychological plausibility (most important)—a taxonomy should be "informed by what is currently known about language processing, cognition and problem-solving behaviour" (Kellerman & Bialystok, in press).

In an attempt to place CSs in a parsimonious cognitive framework, the Nijmegen Group divided compensatory strategies only into 2 principal categories, "conceptual" and "linguistic" strategies. Using the former, speakers "manipulate the concept so that it becomes expressible through their available linguistic (or mimetic) resources" (Kellerman 1991, p. 149). Conceptual strategies have 2 types: analytic (spelling out characteristic features of the concept) and holistic (using a substitute referent which shares characteristics with the target item). Linguistic strategies involve manipulating the speaker's linguistic knowledge through either morphological creativity or transfer. Kellerman (1991) relabelled linguistic strategies as "code strategies" so as to extend the category's scope to include nonverbal strategies. Kellerman and Bialystok (in press) suggest that a better term for morphological creativity is "grammatical derivation." Conceptual strategies include traditional categories like approximation, circumlocution, and semantic word coinage; linguistic/code strategies include literal translation, code-switching, foreignizing, and grammatical word coinage.

Bialystok's taxonomy. Bialystok's (1990) intent to develop a psychologically plausible system of CSs was similar to that of the Nijmegen Group and her categories are not unlike theirs. In accordance with her cognitive theory of language processing, Bialystok conceptualized two main classes of CSs, "analysis-based" and "control-based" strategies. The former involve attempts "to convey the structure of the intended concept by making explicit the relational defining features" (p. 133), that is, to manipulate the intended concept on the basis of its analyzed knowledge—for example, providing some distinctive information about it, such as a definition. The latter involve "choosing a representational system that is possible to convey and that makes explicit information relevant to the identity of the intended concept" (p. 134), that is, holding the original content constant and manipulating the means of reference used to express the concept—for example, by resorting to L1 or using mime.

Kellerman and Bialystok (in press) have made an important attempt to synthesize the Nijmegen taxonomy with Bialystok's (1990) framework by positing a 2–by–2 matrix in which conceptual and linguistic knowledge representations (meaning and form) intersect with language processing operations (analysis and control). Although the matrix suggests that analysis and control are exclusive categories, the authors emphasize that these 2 cognitive functions occur simultaneously in language processing, although with varying significance, thus forming a continuum. CSs are, then, called upon when:

> the usual balance between analysis and control is disturbed (typically through inaccessibility of linguistic knowledge) so that one of the dimensions gains prominence. It is this disruption of the usual balance of processing, a disruption that may or may not be deliberately induced by the speaker, that makes this kind of communication strategy.

Poulisse's taxonomy. Although the Nijmegen Group's taxonomy was psychologically plausible—it followed the distinction between conceptual and linguistic knowledge representations in long-term memory and was also compatible with Bialystok's (1990) 2-component model of language processing—Poulisse (1993) argued that it did not sufficiently take into account the processes involved in speech production as outlined by the L2 adaptation of Levelt's (1989) well-known model of L1 processing. For example, from a process-oriented perspective, holistic conceptual strategies and transfer strategies are largely similar: "Psychologically, there is little or no difference between a substitution by a related L2 word and a substitution by the equivalent L1 word" (Poulisse, in press-b). Thus, the psycholinguistic processes underlying conceptual and linguistic/code strategies are no different viewed from Levelt's speech-production perspective; therefore the categories proposed by the Nijmegen Group need revision. Poulisse's new, modified taxonomy of compensatory strategies consists of 3 major strategy types: (a) substitution strategies—omitting or changing one or more features of a lexical chunk

in search of a new lexical item (the L1/L2 specification being treated as one of the features); (e.g., traditional approximation or code switching); (b) substitution-plus strategies—substitution strategies accompanied by the "out-of-the-ordinary application of L1 or L2 morphological and/or phonological encoding procedures" (Poulisse, 1993, p. 180; e.g., foreignizing); and (c) reconceptualization strategies—a change in the preverbal message involving more than one chunk (e.g., circumlocution).

Kellerman and Bialystok (in press) raised several issues concerning Poulisse's (1993) tripartite model, arguing that it "does not seem to be able to draw a clear distinction between Substitution and Reconceptualization strategies": for example, in cases of definition-like structures (e.g., "stuff to kill flies") and strategy tokens that exemplify superordinate categories by lists of category members (e.g., "tables, beds, chairs and cupboards for FURNITURE"). They contend that the ambiguous status of the fairly common phenomenon of exemplification definitely challenges Poulisse's typology, whereas the Nijmegen Group's two-way classification scheme is immune to the list/single exemplar problem. Kellerman and Bialystok's critical analysis, together with Poulisse's (in press-b) response, provide a fascinating insight into cutting-edge developments in CS research using a psychological approach.

Summary and Implications

Language problems and difficulties are a salient part of communication in a L2 and problem-management occurs at several levels. No wonder "communication strategies," seen as the language devices used to handle communication problems, have been the target of much research during the past two decades. It is also understandable that the approaches to understanding CSs have varied according to the researchers' general orientations towards language analysis. This diversity is reflected in the various definitions and taxonomies of CSs discussed here.

Looking at the development of CS research makes a general pattern evident. The initial priority—identifying and classifying CSs—has gradually given way to the analysis of the mental processes underlying CS use. At present, the main concern of several leading researchers is to establish a process-oriented framework of strategic language behavior with psycholinguistically valid process categories. Two particularly notable approaches, the Nijmegen Group's and Poulisse's (1993), attempted to relate strategy use to current models of language processing and speech production. However, at the moment both models are restricted to lexical-compensatory strategies only, excluding all other areas of strategy use. One important direction for future research is to extend the psycholinguistic approach to cover other types of strategies. (Kellerman & Bialystok, in press, have already begun by attempting to fit "reduction strategies" and "appeals for help" into the Nijmegen scheme.) Another is to focus on non-lexical CSs as well, particularly on strategies related to grammatical problems.

In sum, CS research has made a lot of progress during the last two decades and has remained a potentially fertile source of insight for two reasons. First, it is a truly "applied" area: The practical implications of understanding problem-management in L2 communication are enormous. After all, L2 speakers spend a lot of time and effort struggling with language difficulties, yet L2 courses do not generally prepare students to cope with performance problems. Second, by relating interlanguage analysis to psycholinguistic investigations of speech production, the study of CSs help refine scientific models of L2 learning and use.

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Note

[1]Even though Long (1983) called these discourse modification patterns "tactics" rather than "strategies," their definition appears to fit traditionally conceptualized "communication strategies", in that CSs are immediate verbal "first aid" devices.

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