



## WHAT DO WE MEAN BY FLUENCY?

FRANCINE CHAMBERS

*University of Southampton, School of Modern Languages, Faculty of Arts, Avenue Campus,  
Southampton, SO17 1BF, UK*

Fluency is a commonly used notion in foreign language teaching, frequently contrasted with accuracy especially in a communicative language teaching. In ordinary life it often has an extended meaning and is used as a synonym of overall oral proficiency. On the contrary, in the assessment of foreign language proficiency, it is one of several descriptors of oral performance. Despite the belief that we share a common definition as language teachers and researchers, there is some evidence that agreement cannot be taken for granted and various interpretations coexist. The purpose of this paper is to review recent research into the qualitative and quantitative aspects of fluency in order to arrive at a clearer definition of the word, both as a performance descriptor for oral assessment of foreign language learners and as an indicator of progress in language learning. It is suggested that research into temporal variables in speech production provides concrete evidence which can contribute to a more precise definition of fluency. However a purely quantitative definition of fluency does not enable us to discover how to facilitate efficient processes of speech productions. A qualitative, linguistic analysis of the language produced by advanced language learners reveals some of the links between linguistic knowledge and performance skills. © 1997 Elsevier Science Ltd

### INTRODUCTION

Fluency is a commonly used notion in foreign language teaching and yet it is a concept difficult to define precisely. Its frequent use as a descriptor of oral performance in the course of assessment requires that we agree on what constitutes fluency. As teachers we also need to know how it develops in order to create the conditions in which foreign language learners increase their fluency. It is often assumed by teachers and learners that practice will help the mechanisms of production, but how precisely this does happen is not clear. There is an implicit belief that fluency cannot be taught and that it will emerge naturally, for example as a result of a stay abroad. Irrespective of the context in which the concept of fluency is used, speed and effortlessness seem to be the two main characteristics of a fluent performance. Whereas speed (or the amount of speech in a given time) can be measured, terms such as smoothness, ease or effortlessness are qualitative judgements, often based on a global impression. The purpose of this paper is to review recent research

into the qualitative and quantitative aspects of fluency in order to arrive at a clearer definition of the word, both as a performance descriptor for oral assessment of foreign language learners and as an indicator of progress in language learning.

## PROBLEMS OF DEFINITIONS

### *Fluency as a synonym of oral proficiency*

In ordinary language, people say, "He speaks the language fluently" or "She is very fluent" to describe the spoken production of a person who can use the language effectively usually in reference to someone speaking a foreign language. When taken in this broad sense, the boundaries of the concept tend to merge with the notion of "native-like", a phrase commonly used to describe very competent speakers of a foreign language. Crystal's (1987) definition of fluency in his *Encyclopedia of Language* is no different from that found in the *Concise Oxford Dictionary* as "smooth, rapid, effortless use of language" (Crystal, 1987: p. 421). The non-technical use of the word is often synonymous with overall linguistic proficiency rather than with strictly restricted aspects of delivery in oral production. When we say "She speaks French fluently" in ordinary conversation, we mean that a person has a good command of the language and uses it with ease and efficiency. Even among language teachers, there is some degree of confusion as to what we mean by fluency and the professional use of the word covers several overlapping interpretations, as has been noted by a number of researchers into this area (Riggenbach, 1991; Schmidt, 1992; Schmitt-Gevers, 1993; Freed, 1995). To differentiate fluency from overall language proficiency is therefore the obvious first step to take.

### *Fluency in a communicative language teaching perspective*

Secondly, the word "fluency" has been widely used in the last fifteen years in the context of communicative language teaching (CLT), often in contrast to "accuracy". It has been used with a distinctive meaning clearly opposed to overall proficiency or to an end state close to native performance. Fluency in CLT is about effectiveness of language use within the constraints of limited linguistic knowledge. Brumfit (1984) emphasized the active and efficient language use at whatever level of proficiency and defined fluency as:

The maximally effective operation of the language system so far acquired by the students (Brumfit, 1984: p. 57).

If fluency is to be regarded as "natural language use whether or not it results in native-speaker-like language comprehension or production" (Brumfit, 1984: p. 56), this definition differs from the traditional view of fluency as broadly synonymous with language mastery and native-like performance. The importance of the CLT definition of fluency was to draw attention to the need for genuine language use at any level of proficiency and to emphasize production processes in naturally occurring situations. It established a general pedagogical orientation which led to specific teaching activities in the classroom. But in terms of judging a performance, it did not bring us closer to analysable factors or a range of skills contributing to a fluent performance.

The model of communicative competence sketched out by Canale and Swain (1980) and refined by Bachman (1990) take into account factors beyond linguistic knowledge and the

ability to construct grammatical sentences by introducing the role of strategic competence. Through the use of strategic competence, learners make the best use of their linguistic knowledge to respond to the specific demands of a situation. There is therefore a direct link between strategic competence and fluency which means that fluency in speech production is influenced by factors well beyond grammatical knowledge. In CLT the notion of fluency is used to assess how well learners use their knowledge to achieve their linguistic and communicative purpose. Whereas in the psycholinguistic perspective fluency depends mainly on grammatical knowledge, in the CLT definition fluency widens to communicative competence.

We have so far seen two definitions which are very different, even contradictory; yet both definitions have a tendency to expand and become all-encompassing as one veers towards overall linguistic proficiency and the other towards communicative ability. However for many foreign language teachers, fluency is usually applied to describe spoken language and restricted to speech flow and speech rate. Most descriptions of fluency in marking schemes for oral assessment refer to the absence of features such as hesitations, pauses, etc.... In research also, studies of fluency focus on various aspects or degrees of disfluency.

### QUANTITATIVE ANALYSIS OF FLUENCY IN SPOKEN PRODUCTION

Lennon (1990) and Schmidt (1992) have emphasized that fluency is a performance phenomenon, a skill exercised in real time. Lennon (1990) points out that fluency, as one element of oral proficiency, is different in kind from the other components, such as lexical range, syntactic complexity, use of idioms, which can be assigned to linguistic knowledge. The distinction between skill and knowledge is important. It is partly in the relationship and interaction between skill and knowledge that the difficulty of the concept lies, since levels of knowledge in any of the linguistic areas (lexis, grammatical expertise, etc...) affect fluency.

Schmidt (1992) focuses on the processing and production of spoken language in real time and gives his own definition of fluency as a "primarily temporal phenomenon" and states that "fluency in speech production is *automatic procedural skill*" (Schmidt, 1992: p. 358). Fluency develops as more production processes become automatic. So in terms of second language acquisition, fluency is dependent on automaticity, although it may never reach the high degree achieved by native speakers. Levelt, writing on speech production in native speakers, emphasises the need for automaticity if production is to be fluent:

Most of the components underlying the production of speech. I will argue, function in a highly automatic, reflex-like way. This automaticity makes it possible for them to work in parallel, which is a main condition for the generation of uninterrupted fluent speech (Levelt, 1989: p.2).

For foreign language learners much of the grammatical encoding (gender, agreement, verb conjugation for example) becomes automatic only gradually. Raupach (1987) equates non-automatised language with "hesitant and disrupted speech", whereas "processing procedurally encoded knowledge is expected to result in fluent language performance containing longer segments of uninterrupted speech" (Raupach, 1987: p. 132). Developing automatised mechanisms contributes to diminishing the processing load; as long as conscious efforts are required to produce accurate morphology, less space is

available for other planning tasks and this is reflected in “choppy” utterances. Raupach also points out that in many second language learners’ performance, we must expect to find alternation of fluent and non-fluent phases. This alternation exists also in native speaker’s performance but less frequently. Non-fluent phases in L1 speech production are more likely to be meaning-oriented, in an attempt to bring language and thought as close as possible, whereas foreign language learners may struggle both with expressing their meaning and focusing on basic morphological production.

A definition restricting fluency in spoken production to temporal variables, such as pauses of various kinds and length of runs between pauses provides a useful anchorage for a concept which is prone to vagueness and multiple interpretations. Temporal variables in speech production are empirically identifiable and quantifiable. The study of temporal variables also enables psycholinguistic research to gather valuable empirical evidence since processes of language production themselves are not directly accessible. Whereas appreciating a skill is a qualitative judgement (one is reminded of the mark for artistic interpretation in ice-skating implied by terms such as “smoothness” or “ease”), a performance in real time has quantifiable aspects such as rate of speech, frequency and location of silences and hesitations.

#### *Fluency as speech rate*

Speech rate is defined as the number of syllables uttered per second. According to Levelt (1989), speech is normally produced at a rate of about two to three words per second (Levelt, 1989: p. 22). Speech rate is an overall measure which includes *articulation rate* and *pause time*. Articulation rate is expressed “in syllables per second which gives an indication of how many syllables were produced on average per second of actual speech excluding any time devoted to pausing” (Towell, 1987: p. 163). Levelt states that articulation runs at an average speed of about fifteen phonemes per second (Levelt, 1989: p. 22). This quantification highlights the remarkable speed at which human beings process and produce speech in their first language. Some studies of developing fluency in foreign language learners through repetition of the same tasks have used speech rate as a measurable feature of fluency (Nation, 1989). However there seems to be a growing consensus in more recent research that fluency cannot be reduced to speed of delivery and that articulation rate has less impact on our perception of fluency than the length, the nature and the location of pauses in the utterance.

#### *Pauses*

The presence, length and frequency of silences and hesitations affect the listener’s perception of an interlocutor’s fluency. In verbal encounters common to all language users, mainly conversations and discussions, pauses and hesitations are normal features of the interaction. Despite this, silence is often seen as a sign of dysfluency, especially in foreign language speech where it may be perceived as signalling poor functioning of mental processes, instead of viewing it as a normal feature of speech processing. Chafe (1985) highlighted the need for pausing in native speaker’s production as:

good evidence that speaking is not a matter of regurgitating material already stored in the mind in linguistic form, but it is a creative act, relating two media, thought and language, which are not isomorphic but require adjustments and readjustments to each other.

In our first language, we are more likely to hesitate when trying to express new thoughts, as in a seminar, than in a routine everyday exchange. Silences or pauses in the midst of an

utterance indicate various kinds of searches, from searching for an idea, or for the best word to express an idea to searching for a grammatical form. Whereas in the case of native speakers monitoring morphological accuracy is unlikely to cause many hesitations, this occurs far more frequently where foreign language learners are concerned, depending obviously on their overall linguistic proficiency.

Although listeners accept pauses in their native language, not all pauses are acceptable, hence the differentiation between “natural” and “unnatural pauses”. Natural pauses, allowing breathing space, usually occur at some clause junctures or after groups of words forming a semantic unit. Pauses appearing at places other than these are judged as hesitations, revealing either lexical or morphological uncertainty. These hesitations may be either simply a silent gap or marked by non-lexical fillers (“uh”, “um”), sound stretches (or draws on words) or lexical fillers with no semantic information (such as “you know”, “I mean”). These various devices do not all contribute equally to an impression of non-fluency. Some are perceived by native listeners as more dysfluent than others. According to Riggensbach (1991: p. 438), the frequency of unfilled pauses is a strong indicator of nonfluency although these pauses need to be further differentiated according to place and function. Riggensbach also notes that hesitations due to self-repair do not appear to have such a clear role in perceptions of dysfluency.

But the reasons why foreign language learners pause differently from native language speakers are not only that they are learners; the distribution of pauses may also be influenced by the pausing pattern in their mother tongue. We know very little as yet about contrastive aspects of pausing. Comparing temporal variables in English and in French, Grosjean and Deschamps (1975: p. 162) showed that pausing occurred more often in English than in French but that the pauses were briefer; they also observed that pauses inside the verb phrase are more likely in English than in French. If, as Raupach (1980: p. 268) suggested, learners transfer their pause pattern from L1 to L2, the task of interpreting the function of pauses in L2 speech production is even more complex with an added cross-linguistic perspective.

#### RESEARCH COMPARING HEARER-BASED JUDGEMENTS AND EMPIRICAL EVIDENCE FROM TEMPORAL VARIABLES

Since a precise definition of fluency is lacking, one course of action is to analyze non-native speech identified as fluent or non-fluent by professionals in order to shed some light on the factors which influenced them in their assessment as listeners. Very little research has been carried out in this area. A few studies have combined this dual approach which consists in asking assessors to judge oral production on a fluency scale and then analyzing the spoken production in terms of its temporal variables (Lennon, 1990; Riggensbach, 1991; Freed, 1995).

Riggensbach (1991) analysed excerpts of audiotaped dialogues in terms of the frequency and function of such features as hesitation phenomena, repair and rate of speech, contrasting fluent and non-fluent non-native speakers. Riggensbach also stressed the need for a qualitative analysis of hesitation phenomena to ascertain the nature of each hesitation

in context. From her study, which was limited in scope, Riggenbach concludes that "hesitation phenomena seem to be salient in determining fluency level" as has been generally assumed prior to any specific research, confirming in this case the conventional wisdom of the profession. She comments in particular on the negative effects of clusters of hesitations (more than three) and adds that even short natural pauses, for example pauses occurring at clause boundaries, will lose their status of acceptability as if contaminated by other hesitations in the same cluster. Her study suggests that the frequency of *unfilled pauses* is one of the most salient features indicating low fluency. Rate of speech (number of words per minute or syllables per second depending on researchers) also seems to contribute to an impression of fluency. However these two contributive factors, low frequency of unfilled pauses and fast rate of speech, were not sufficient for a speaker to be judged fluent.

A curious relationship between linguistic proficiency and impressions of fluency seemed to operate. Riggenbach observed that non-native speakers may appear fluent on the two above measures and yet be rated as non-fluent. This suggests that judgements of fluency actually embrace linguistic accuracy in some way. Therefore it may be that the restricted definition of fluent speech as simply smooth and continuous becomes applicable only beyond a certain level of linguistic proficiency. Riggenbach tentatively proposes that "fluent speakers resemble each other", but there may be different types of nonfluent speakers:

In order for there to be fluency, then, it appears that many different conditions have to be met—some proficiency in grammar, pronunciation, and vocabulary to mention a few. In the case of two-party speech other possible conditions may be related to sociolinguistic and even affective factors. Nonfluency, on the other hand, can arise from a deficiency in any one of these areas: the inability to produce a given grammatical structure may be the first link in a chain of dysfluencies that may as easily have begun with a comprehension lapse, a pronunciation problem, or a motivation for precision in word choice (Riggenbach, 1991: p. 439).

This exemplifies the mixed definitions which the native judges may have applied, sometimes blending linguistic proficiency and effortless production. Other factors also impinge on the perception of fluency. Interestingly Freed (1995) reports that some of the native speaker judges in her study were influenced by accent and intonation, an area which is very under-researched at the moment. Five out of the six judges in her study agreed that rate of speech was a major factor in their decisions and four out of six considered fewer pauses as an indicator of fluency. There was divergence however on other factors (Freed, 1995: p. 136), which highlights the problematic use of the notion of fluency as a consistent measure in the assessment of oral performance if it is not carefully defined. All three studies above used the global measure of fluency without restricting the definition in any way and consequently, successfully demonstrated the lack of agreement attached to the concept of fluency. It would seem that the subjective judgement of native speaker assessors may not be a useful starting point. Lennon suggested that "it might be possible to identify some variables that function as core fluency components and some that are peripheral" (Lennon, 1990: p. 413). Focusing on pauses could provide this core provided that both quantitative (frequency and length of pauses) and qualitative (position in the utterance, filled or unfilled) analyses were carried out.

Becoming fluent therefore is not about speaking faster (articulation rate), but about pausing less often and pausing at the appropriate junctures in an utterance. The comparative

study of hesitations in native and non-native speech productions brings useful factual evidence to the differences in speech processing in L1 and L2. Some of the evidence given by researchers helps to pinpoint what is perceived as a lack of fluency typical of foreign language learners (Dechert and Raupach, 1980). The observation that the rate of speech in L2 is likely to remain for a long time slower than in L1 is not a revelation as Towell *et al.* (1996) point out. Speech rate alone cannot be what contributes to the feeling that, as a listener, we are interacting with a foreigner. What appears significant from research in this area is:

1. the frequency of pauses rather than the length,
2. the length of run (the number of syllables between pauses),
3. the place of pauses in an utterance,
4. the transfer (or not) of pausing pattern from L1 to L2.

Following a series of studies of temporal variables in spontaneous oral language in French and in English (Grosjean and Deschamps, 1972, 1975) by native speakers, Deschamps (1980) compared the results obtained from descriptions in L1 (French) and L2 (English) by French native speakers. The length of silent pauses did not increase in L2 productions, contrary to the researchers' expectations, but the French native speakers paused more often when performing the descriptive task in English. Deschamps also reports on a noticeable increase in the number of pauses at non-grammatical junctures and a decrease in the number of pauses at grammatical junctures from French L1 to English L2. These results are similar to Raupach's study of second-language speech production by French and German undergraduates in L2 German or French (Raupach, 1980: p. 267). L2 users process utterances in shorter segments and these segments increase in length as fluency develops. What we need to discover is what enables L2 users to produce longer segments.

### LINGUISTIC FEATURES AND INCREASED FLUENCY

Towell (1987) and Towell *et al.* (1996) for English students learning French and Raupach (1987) for German students of French, analysed the speech produced by undergraduates before and after a stay in France. In both studies, the main factor contributing to an improvement in fluency was identified as an increase in the mean length of runs (i.e. the speech unit between two unfilled pauses). Towell *et al.* (1996) interpret their results using Levelt's model of speech production and attribute this to changes at the formulating stage when linguistic knowledge (which at first in L2 is declarative) becomes proceduralised. Declarative knowledge refers to explicit knowledge of the language system; procedural knowledge refers to the automatic processes which operate without conscious control. Towell *et al.* (1996) have reported mainly on the quantitative results of their study of twelve undergraduates learning French. However they also provide some qualitative data based on the analysis of the language produced by two selected students before and after a stay abroad on the same task. They conclude that:

what is surprising is that this increase in fluency is not the result of a quantitative reduction in the amount of pausing that subjects do, nor in the increase in the speed with which they articulate what they say. Rather there is an increase in the length and complexity of the linguistic units which are uttered between pauses (Towell *et al.*, 1996: p. 112).

In a case study comparing two speakers of French (L2), one with a low level of fluency and the other with a high level of fluency, Raupach (1980) also comments on the use of linguistic devices which allow time to elaborate the next sentence or part of the sentence. Phrases such as: “au niveau de..., quant à..., en ce qui concerne..”, are highly in evidence in the fluent speaker studies but non-existent in the non-fluent speaker. These phrases announce the topic and focus the attention of the listener while allowing the speaker time to formulate the utterance further.

What appears to enable learners to produce longer speech units is the increasing use of automatised chunks or clusters of words combined with newly assembled strings of words. Towell *et al.* (1996) note the occurrence of such French phrases as: “Il y a des gens qui...” or “Il y a un film que...” (e.g. Il y a + Noun + qui/que...) and a range of combination with “c’est” + noun/adjective. These phrases are used frequently in spoken French as shown in data collected by Chambers and Richards (1995: p.8) from interviews with 24 French native speakers. They found that one fifth of all relative clauses either with “qui” or “que” were dependent on the introductory or presentative phrase: “Il y a + [Noun] + qui/que...”. Towell *et al.* comment precisely on the use of this presentative phrase as one of the changes which occurred in the data from one of their most fluent students before and after the stay abroad. Whereas prior to her stay she would use the “classic” order SVO, after her stay she would use presentative construction more frequently thus lengthening her speech runs. Towell *et al.* consider this as evidence that the use of “of ‘double marquage’ and sentence builders have, as a result of the length period of residence in France, become proceduralised in this learner’s production model and is therefore available in short-term memory for deployment in rapid spontaneous speech” (Towell *et al.*, 1996: p. 112). If we compare the following sentences from the Chambers and Richards’ (1995) data: (1) “Il y a un film que j’ai beaucoup aimé, c’est ...”, with (2) “J’ai beaucoup aimé le film ..”, sentence 1 sounds natural to a French native speaker whereas sentence 2 produced by an English learner does not. Sentence 2 is grammatically correct but much less likely to be uttered in conversation by a French speaker. The structure in Sentence 1 is partly fixed but allows a vast number of sentences by simply substituting the noun and the verb. It provides a frame to build new sentences. Moreover the part which is fixed requires less conscious processing and allows time to fabricate the rest of the sentence. Nattinger and DeCarrico (1992) make a strong case for teaching prefabricated units or patterns because they reduce the processing effort. They define lexical phrases as:

multi-word phenomena that exists somewhere between the traditional poles of lexicon and syntax, conventionalized form/function composites that occur more frequently and have more idiomatically determined meaning than language which is put together each time (Nattinger and DeCarrico, 1992: p. 1)

They give examples of “form/function composites” which are easy to acquire, efficient to use and permit a wide variation of lexical content such as “Could you give me...” (i.e. Modal + YOU + VP) (Nattinger and DeCarrico, 1992: pp. 64–65). They distinguish lexical phrases which are non-productive because they do not allow substitution (Ex: by the way, in other words) from those which allow some variability like the pattern “a — ago”, which provide a slot in which a lexical item stating duration can be inserted: a year ago, a minute ago (Nattinger and DeCarrico, 1992: pp. 36–37). These productive lexical or syntactic phrases are of particular value to foreign language learners and can enhance their fluency by providing a frame to build a sentence as well as approaching the characteristics of native-like speech.

In this section we had to return to linguistic analysis and show the link between temporal variables of speech production and levels of linguistic proficiency in achieving fluency. Having first suggested that a restricted definition could be formulated by focusing particularly on temporal variables, we then find that this needs to be refined by an analysis of the language, in particular its syntactic features. Towell *et al.* (1996) found that the best indicator of the development of fluency in a narrative task (re-telling the story of a film) was the mean length of run which increased over time and after a stay in France. Further analysis of advanced learners' speech production needs to be carried out in order to establish the importance of sentence builders or lexicalized stems in the development of fluency. Whether the ability to use these presentative sentence builders is only dependent on increased exposure to examples, as is the case for foreign language students during their study abroad, or actually a developmental stage is undecided at present. But there is little doubt that there is increased exposure to genuine native spoken production during a stay abroad.

### CONCLUSION

For fluency to be a useful concept for research into foreign language oral production, it needs to be clearly differentiated from overall language proficiency and from communicative competence. A study of temporal variables enables us to be more precise about what is meant by phrases such as flow or smoothness. We know from the study of speech in first language that some pauses are an integral part of oral production. It seems that apart probably from learners in the early stages of acquisition where lengthy silences may be due to a very limited linguistic repertoire, non-native speakers do not actually pause longer than native speakers. If the overall pausing time is greater in a non native production, it is due to a higher frequency of pauses. In other words, foreign language learners produce shorter word groups; they also pause in places where a native would not pause, which accounts for the use of the phrase "unnatural pauses".

One of the more useful observations from some of the studies of temporal variables arises from the qualitative analysis of the linguistic data. Some of the evidence provided by Towell *et al.* (1996) and Raupach (1980) shows the link between fluency and features of syntactic complexity, such as presentative phrases and patterns offering a frame for sentence building. These phrases can be presented explicitly to learners. They also happen to be much closer to the structure of the spoken language. The use of these phrases also implies a varied knowledge of lexis and a skill in using them appropriately. Of course the return to syntactic complexity and lexical range shows how difficult it is to maintain fluency as a separate concept from proficiency. However what is implied here are only those aspects of syntactic and lexical knowledge which specifically help learners to process language in real time. More contrastive studies of languages can also indicate different pause patterning, rarely demonstrated to learners who are left to their own devices to absorb intonation features and word groupings.

Finally, as a criterion often used in the assessment of oral performance, the concept of fluency is confused, multi-layered and therefore needs to be defined specifically. It cannot be assumed that we all share the same definition of fluency. Otherwise the validity of the judgements made by assessors is seriously in question.

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