

Danuta Gabryś-Barker

ORCID: 0000-0003-0626-0703

University of Silesia

[danuta.gabrys-barker@us.edu.pl](mailto:danuta.gabrys-barker@us.edu.pl)

## (Applied) Psycholinguistics for Foreign Language Teachers: A Diachronic Perspective

**Abstract:** In discussing any scholarly discipline in both its theoretical and empirical dimensions, there is value in taking a diachronic view to determine the starting point, the direction and to assess achievements leading to new developments. The aim of this article is to outline the evolutionary character of psycholinguistics (and applied psycholinguistics), with emphasis on those areas of psycholinguistic research which are relevant for language practitioners: teachers, learners and users of foreign languages. The choice of topics made is by no means exhaustive, as psycholinguistics over decades has been—and still is—is a vast multidisciplinary domain of study. Only selected topics are discussed here, and the selection is based on the personal assessment of the author as to their importance and the evolutionary and dynamic impact they have had on language education and practical FL classroom instruction across time. This overview offers a brief discussion of psycholinguistic research from the fifties of the previous century to the present day. In each of the areas outlined, implications relevant for foreign language teachers, learners and users are discussed to create an overall picture of the developing contribution of (applied) psycholinguistics to foreign language education.

**Keywords:** (applied) psycholinguistics, a diachronic perspective, foreign language teachers, foreign language learners, language learning and teaching

### Introduction

Psycholinguistics, and also its more practically-oriented counterpart, applied psycholinguistics, (Pinto; Puppel; Kurcz; Mininni and Manuti) are concerned with human communication in its various aspects. Traditionally, the aims of psycholinguistic research focus around processes involved in acts of verbal communication between people: language comprehension, language production and language acquisition. As the very name suggests, psycholinguistics originates from psychology and draws on theoretical, cognitive and applied linguistics, as well as cognitive

sciences, biology, neurosciences and anthropology as important sources. More recent advances rely on the findings of computational linguistics and computer sciences. In other words, when defining psycholinguistics, we might describe it as

a psychology of language based on how certain psychological and neurobiological factors interact in humans at the level of communication, on the comprehension and production of verbal messages in an interaction act, but also in the brain of an individual language user (Gabryś-Barker, *Topics 7*).

Taking a diachronic perspective, it can be observed that psycholinguistics as a research domain initially concerned itself with studying just first language acquisition and only later took up the theme of second language acquisition and foreign language learning. This can be assumed to have resulted from the rapid development of applied linguistics and developing links between the two domains of study. The development of applied linguistics brought about research in second language acquisition (SLA)—which these days is treated by some as a separate domain of study—the findings of which are directly related to education and language instructional practices. At the same time, SLA clearly draws on the findings of (applied) psycholinguistics. The main dimensions of the latter domain focus on developing knowledge about the language of human interaction and success in being able “to function verbally (tact/implicit knowledge versus explicit knowledge) and what cognitive processes are involved in language comprehension and production” (8).

In terms of more precisely-defined areas of interest, psycholinguistics looks at phenomena and processes such as perception, memory, thinking processes, acquisition and learning and affect. Specific topics investigated by psycholinguists range from

speech comprehension and production, child language acquisition and bilingualism to language instruction and education, language disorders and issues in verbal and nonverbal communication, as well as speech technologies, human communication models and mass-media psycholinguistic analysis, more recently extended to the study of human emotionality. Applied psycholinguistics employs the practical results of this research in studying communication contexts in their entirety. (8)

In the last decade of psycholinguistic research, that last-named area of focus, affectivity in human communication and learning contexts, has become one of the major concerns and has resulted in a vast amount of research based on earlier neurolinguistic findings demonstrating the primacy of affective processing, as described by, for example Schumann and Paradis (“The Neurolinguistics”), among others, and also in SLA in the studies of Dewaele (“Investigating” and *Emotions*), Mercer and Williams and in the Polish academia (Piechurska-Kuciel, “Self-regulatory”; Gabryś-Barker, “Emotion” and “The Affective”). They all give evidence of the primacy of affectivity in processes of communication and interaction between people as explored by psycholinguistic research. An additional focus of these studies can be found in the research on theory of information: language

models describing language as a complex interaction of its component subsystems, language functions and importantly, elements of the sociolinguistic dimension of language development and use. All the themes in psycholinguistic studies focusing on language functioning are seen as determined by psychological factors.

Gabryś-Barker (*Topics*) poses the question of how important (applied) psycholinguistic research is in (language) educational contexts. Educational research embraces various paradigms in which the emphasis is on different dimensions of teacher/learner functioning, their communication and interaction, language development as well as on varied approaches to the process of learning (and teaching) a language. Table 1 presents a taxonomy of approaches used in educational research, the last one being psycholinguistic research contributing to the discussion of educational issues

Table 1: Dimensions of educational research

Approach	Focus
Classical and scientific	quantifying data, measuring different forms of behaviour
Socio-cultural-historical	measuring social and cultural aspects of behaviours
Psycholinguistic	phenomenological and interpretive, relying on qualitative data and its analysis in terms of thinking, feeling as expressed by language, problem-oriented

The overview presented in this article ranges from focus on language as a code and behaviourism, through the transformational-generative grammar of Chomsky and language acquisition device (LAD), to the communicative competence of Dell Hymes and the beginnings of cognitive grammar. In relation to more recent times, the overview offers a picture of psycholinguistic research originating in the phenomenon known as globalization. Globalization, predicated on travel and the increased mobility of people, started towards the end of the 20th century and intensified through recent immigration flows until the present time. It has brought about a wide-spread interest in multidisciplinary research focusing on second/foreign/multilingual language acquisition in a variety of natural and educational contexts, in different language constellations and exploring the language needs of its users. Also, growing concerns about people's well-being in a world of social and political turmoil have stirred interest in the role of the affective dimension and positive psychology, which have become flourishing areas of academic research with a whole array of possible applications. Each area of focus outlined above offers the most significant implications for both foreign language teachers and learners to illustrate varied contributions of applied psycholinguistics to foreign language education.

## 1. Psycholinguistics from a diachronic perspective

Having outlined the topic areas and the relevance of (applied) psycholinguistics to research on educational issues with special attention given to language development in and beyond formal instruction environments, I would like to comment on how this discipline evolved across decades. The overview demonstrates the link between older theories and ideas and a more modern way of thinking. Some of the issues proposed as long ago as the 1950s are still with us—the same or modified according to what we know now, while some have been discarded or became at the very least controversial. Some of them have taken up a different name and made the claim to be novel ideas.

### 1.1. Beginnings: The 1950s and 1960s

The 1950s is considered to be when psycholinguistics emerged as a scholarly discipline and the term psycholinguistics was first used by Nicholas Pronko in his article “Psycholinguistics: A Review”, and popularized later by Charles E. Osgood and Thomas A. Sebeok. Psycholinguistics is then marked as quite an active and fast-developing domain in scholarly discussions of language as a code and theories of how language information is processed to perform its various functions, viewed from an interdisciplinary perspective. However, what was most significant at that time and had an impact on future developments was the contribution of psychology and linguistics to how we understand language learning, first researched in relation to the mother tongue and then, by analogy, to a second/foreign language. The behavioural theories of B. F. Skinner and his seminal work *Verbal Behavior* offered the explanation for how the first language is acquired through exposure to input and an imitation process, in which a given stimulus (S) brings about a response (R), which in turn is reinforced. In the case of the mother tongue/first language (L1), the reinforcement is usually given by a parent or a caregiver. The behavioural explanation for language acquisition was adapted to the context of foreign language learning, in which responsibility for language development is given to the teacher as the organiser of the teaching/learning process following the sequence S-R-R, which was believed to lead to language habit formation. Behavioural theory, combined with structural linguistics, resulted in the aural-oral approach and gave rise to the audiolingual method (ALM), initially seen as a quick method of learning a foreign language. The importance of structural linguistics was seen in the view it offers on language as system of set patterns that can be manipulated infinitely in language production. Naturally, a language drill constituted the major form of language activity, imitating the immersion of an L1 child repeating parental or caregivers’ input. A rigorous treatment of language errors was meant to eliminate them from the FL classroom, also forbidding the use of L1 as the most evident source of errors. It was in the 1960s that in-depth error analyses were carried out

by (applied) linguists and practitioners on the basis of extensive contrastive studies (Corder, “The Significance” and *Error*).

Classroom practice employed the results of these studies in constructing syllabuses by grading and sequencing their language contents according to language difficulty. The focus was on the negative results of language transfer (interference) and aimed at eliminating them. Thus, as mentioned above, the mother tongue was banned from the FL classroom and the teachers’ objective was to develop language correctness in their learners’ performance. The major role of a language as authentic communication was not in the spotlight in a FL class as intensive drilling, model pattern practice and dialogues were not the way to create situations of natural interaction and communication. They were just controlled language activities, trying to develop automatization/internalisation of correct language habits. In the decades to come, this approach to language acquisition and learning was strongly resisted and substituted with a different perspective offered by linguists and psycholinguistics on learning processes. The question is whether it all bad and thus should have been discarded and eradicated from our modern methods of teaching FLs.

The most evident example of how the aural-oral approach based on behaviourism and structuralism has shaped present day EFL instructional practices is the Callan method, based on the principles of ALM, only slightly adapted in their execution (Callan Method Organisation). The method appeared first in the 1960s but gained popularity decades later, revisiting the old principles of ALM in its focus on mechanical repetition of long chunks of language based on internalised vocabulary and sentence patterns. It meant to reconstruct the situation of a child acquiring their first language through exposure, but clearly it does not do this. The essence here is in learning language by heart, whereas in L1 acquisition, a child tries out different language forms on the basis of analogy, and through a sequence of these trials, arrives at the final correct language form (hypothesis forming and hypothesis testing).

### 1.2. Psychological approach to FL teaching: Continued. 1960s and 1970s

The 1960s and 1970s were very much influenced by the scholarly work of Noam Chomsky and his ideas concerning language processes expressed among others in the assumptions of transformational-generative grammar and the human ability to understand and create unlimited number of sentences. It was then that the construct of LAD—Language Acquisition Device—was first proposed (Chomsky). An important distinction was made between competence and performance, later translated into declarative knowledge (what?) and procedural knowledge (how?) respectively. The distinction between competence and performance had consequences in FL classroom practice, when for the first time the understanding that knowing language rules does not translate automatically into language performance became the concern of practitioners. The period witnessed a continued focus on

audiolingual practices in language instruction, also resulting from contrastive analysis and linguistic comparison between languages bringing about error analysis (Corder, “The Significance”), which for a long time affected classroom practices and the need of rigorous treatment of errors. However, with the appearance of Selinker’s idea of interlanguage (learner language) and the dynamic character of its development, seeing errors as an inevitable part of language learning became generalised and was expected to eradicate their rigorous treatment in a FL class.

The inadequacy of Chomsky’s distinction between competence and performance was pointed out by Dell Hymes in his concept of communicative competence, proposed for the first time in 1966 in relation to native speaker interaction and communication. Later on, it was adapted for the purposes of FL instruction in creating communicative language teaching in its range of approaches from the strong to a weak form, evolving over the decades to come, but following the main idea of communicative competence as the ability to understand and be understood by the interlocutor in a communication act. The concept initially embraced linguistic competence, i.e. knowledge about the language system at its various levels (morphosyntactic, phonological, lexical, semantic), so vaguely resembling Chomsky’s competence, and the practical sub-competences of socio-cultural, pragmatic and discourse nature (vaguely resembling Chomsky’s idea of performance). The concept evolved and was much later expanded by other researchers adding strategic competence and non-verbal competence (Gabryś-Barker, “The Affective”). But, as mentioned above, most importantly, it gave rise to communicative language teaching, moving away from behavioural approaches combined with the ideas of structural linguistics.

It was also at that time that more and more attention was paid to psychological aspects of language functioning and the first innovative ideas were introduced in FL teaching. New approaches and teaching methods called unconventional, deriving from various understandings of language learning processes, entered language classrooms. For the first time, the ideas of humanistic psychology were implemented in education looking at any learning process from a more holistic perspective, embracing not only cognition, but also affectivity. This interest derived from the earlier publications of Abraham Maslow on the hierarchy of needs (“A Theory” and *Motivation*) and was later taken up in the humanistic education ideas of Gertrude Moskowitz in her seminal book *Caring and Sharing in the Foreign Language Class*.

The established ideas and findings of (humanistic) psychology and sociology gave rise to such methods as:

— Total Physical Response (TPR)—focus on the interaction of the two hemispheres of the brain, use of motor activities in language learning, imitating of L1 acquisition processes in FL learning (Asher)

— The Silent Way—implementing discovery learning, activating learners’ ability to solve problems (Gattegno)

— Suggestopedia—using the powers of suggestion and visualisation, personality adaptation ideas, safe environment (Lozanov)

— The Community Language Learning (Counselling Learning)—learning as a social (counselling) activity, using the resources available (such as one's L1), creating a close relationship between a teacher and a learner, lowering affective filter (Curran)

Clearly, this period of applied psycholinguistics made a start in moving away from strictly language-oriented ideas and linguistic theories to a more open and flexible approach to understanding the role of contextual, non-linguistic factors as well as individual personality traits. In fact, it could be argued that this was the real beginning of applied psycholinguistics in the context of second language acquisition/foreign language learning.

### 1.3. The multidisciplinary approaches of the 1970s and 1980s

The decades that followed continue the interest in studying language and processes involved in its use, acquisition and learning in communication at the level of discourse. Language itself was no longer seen, as proposed by structuralism, as a set of patterns, but as a continuous text: oral and written discourse was understood as a coherent sequence of sentences in a speech/text and focused on its characteristics such as, for example, starting a conversation or turn-taking in natural conditions of language use. This resulted in the development of discourse analysis carried out in multidisciplinary fashion naturally involving linguistics, but also all the psychological and sociological profiles and traits of interlocutors, as observed in a communication event (Tannen, *That's Not and Talking*). Discourse analysis took up issues of gender in language and issues of (in)equality, among many other topics. In second language acquisition studies, discourse model of language acquisition/learning claimed that language development is determined mainly by communication and interaction (Hatch).

However, the most influential theory at the time was the well-known Monitor Model of Stephen Krashen, which does not require any elaborate explanation for anybody interested in SLA. In brief, Krashen proposed five hypotheses describing different aspects of language learning as determined by: the acquisition versus learning hypothesis, the monitor hypothesis, the natural order hypothesis, the input hypothesis and the affective filter hypothesis. Each of the above hypotheses has had implications for FL classroom instruction in terms of setting objectives, constructing syllabuses according to natural order, setting conditions for both acquisition (subconscious) and learning (conscious), offering different types of input to the learner (finely versus roughly-tuned input) and importantly, paying attention to his/her affectivity and the ways it can encourage/enhance (or impede) language learning.

The 1980s were an exceptionally fruitful period for the development of psycholinguistics in relation to language education. It was in 1983 that Howard Gardner published his theory of multiple intelligences (MI), which has had a far-reaching consequence for FL classroom practitioners and brought about multisensory teaching. The major assumption that we are born with just one (verbal) intelligence was challenged by Gardner and led to a new teaching approach which emphasised multiplicity of different intelligences, expressed by multiple perceptual learning styles (multisensory teaching). It can be hypothesised that MI theory influenced the later appearance in the 1990s of Goleman's idea of emotional intelligence.

It was also in this decade that cognitive linguistics emerged, which is often assumed to be distinct from psycholinguistics in its various dimensions, but which contributed to topics studied in both domains, though from different perspectives. (Table 2).

Table 2: Cognitive linguistics versus psycholinguistics (based on Lee)

Aspect	Cognitive linguistics	Psycholinguistics
Goals	how language reflects the mind	how the mind deals with language
Nature of language	language is fully integrated with other cognitive functions  language either reflects these functions or motivates them	language as an autonomous function, processed independently (e.g. language handicapped people, but not otherwise)
Research methods	recordings of language (transcripts), statistical analysis, experiments	recordings of language (transcripts), statistical analysis, experiments  speaker judgements (e.g. grammaticality judgement tests), perceptions
Subfields	historical linguistics, language acquisition, semantics	language processing, language acquisition, language impairments

One area of cognitive linguistics is represented by the scholarly work of cognitive linguists George Lakoff and Mark Johnson. Among others, they propose a metaphoric interpretation of language, which opens up a new area in understanding how languages function with far-reaching implications for how this knowledge can be applied in language learning. The book *Metaphors We Live By* (1980) has not only had an important research outcome for linguistics but it also impacted educational materials, which demonstrate how this understanding of language can be implemented in teaching languages. One such example might be the supplementary series of the *Headway* Coursebooks, *Making Headway* (e.g. Workman, “Phrasal Verbs and Idioms”). It seems that, from that time until the present, we can



observe a creative merging between the two domains of research and their practical implementation in certain areas.

#### 1.4. Interest in an individual: The 1990s and the beginning of the 21st century

The last decade of the 20th century continued the development of psycholinguistics taking up the understanding of language as an important feature of *homo sapiens*; studies in cognition abound and their core ideas constitute an understanding of language as manifestation of culture and its development. Also, the findings of neurolinguistics contributed to the development of different understandings of the nature of language acquisition and learning—with a seminal article by M. Paradis “The Neurolinguistics of Bilingualism in the Next Decades” (2000) and later on, the book *A Neurolinguistic Theory of Bilingualism* (2004). As much as they constitute valid findings, not much is applicable to classroom practices, except for special educational needs learners (patients) with brain lesions. However, it may be assumed that, to some extent, they affected the appearance of NLP (neurolinguistic programming), which is a theory for changing human ways of thinking, behaviour and communication through specially designed techniques of manipulation—making the claim that they are based on how language is processed. NLP has been somewhat discredited as pseudoscientific (Witkowski).

Most notable in this period of psycholinguistics in the context of education is the emergence of the domain of second language acquisition, which not only aimed at theorised models of language acquisition/learning but principally started concentrating on the individual in the language learning process. Although this interest started earlier, even before the 1980s, with research into the age factor (e.g. the Critical Period Hypothesis), aptitude (MLT—the Modern Language Aptitude test) or Lambert and Gardner’s motivation work among others, it was in the 1990s that the research in this area flourished on the basis of these earlier findings. The term *individual learner differences* was already discussed by Ellis in his overview of SLA as a field of study with reference to age, aptitude, cognitive style and motivation. But these individual learner differences (ILD) became the core of multiple studies in applied psycholinguistics shortly afterwards and almost dominated research in applied linguistics. The researchers turned their attention to the uniqueness of the individual, promoting implications of their findings in FL classrooms. Large sample studies using statistical analyses looked at individual differences quantitatively, whereas smaller sample studies used qualitative methods of data collection.<sup>1</sup>

---

<sup>1</sup> For an overview of earlier studies, see Ellis; for more recent ones, see Ehrman, Leaver and Oxford.

The more we learn about individual differences, the more complex the field becomes. We are learning for what we thought were unitary characteristics ... are really ambiguous composites of multiple factors. ... This seems to be a very fertile time for unravelling the issues that related to how individuals learn languages, how and why they undertake and succeed in language study, and how one person differs from another in their styles, strategies, and motivations among other attributes, yet succeed in his or her own way. (Ehrman, Leaver and Oxford 325)

One of the interesting and flourishing areas of psycholinguistics that has had a direct application in language learning and teaching is the study of the affective domain and individual emotions as driving forces behind it. In some way, this is a legacy of Krashen's Monitor Model, or more precisely the Affective Filter, assumptions which for the first time emphasised the role affectivity plays in language acquisition/learning contexts. The explosion of research in this area can be best exemplified by the multiple studies carried out by Zoltan Dörnyei, Peter MacIntyre, Al Hoorie (motivation and attitudes), Aneta Pavlenko and Jean-Marc Dewaele (large sample questionnaire studies on emotions), Jean-Marc Dewaele (enjoyment, boredom, expressions of love, swearing in other languages), Sarah Mercer (teacher well-being), and also Polish psycholinguists Ewa Piechurska-Kuciel (personality) and Mirosław Pawlak and Anna Mystkowska-Wiertelak (willingness to communicate), just to mention a few researchers.

A related area with implications for FL instruction is the application of the findings of positive psychology in SLA research, originating from emotion studies and general studies on human well-being (Seligman). This interest brought about publications of a more general nature introducing positive psychology in education (MacIntyre, Gregersen and Mercer; Gabryś-Barker and Gałajda) and those which offer practical ideas for its implementation in FL teaching and learning (Gregersen and MacIntyre; Budzińska and Majchrzak). A new trend, to some extent deriving from positive psychology studies but also from the research on burnout syndrome, is looking at the well-being of learners and teachers, which has important implications for the teacher training and mentoring practices of future teachers (Mercer and Gregersen).

## 2. Research paradigms of psycholinguistic studies relevant for (language) education

From the very moment psycholinguistics was acknowledged as a scholarly domain, it naturally employed ideas adapted from psychology/sociology or developed its own research methodology as a defining feature of its scholarly standards. In the time of popularity of behaviouristic theories, it was typically behavioural tasks, implemented in the language classroom, which were the dominant source of data

on language learning. They consisted of creating for the subjects opportunities for exposure to language and measuring language performance. One of the typical tasks was observing reaction times in lexical decision tasks, as found in the early studies of Forster and Chambers and Fischler. The effects of behaviorism and structural linguistics were also visible in research on language errors exemplified by the research of Corder (*Error*) or, among Polish scholars, the earlier contribution of Arabski. More in-depth error analysis was made possible by advancements in research methods including a whole range of introspective methods, especially by simultaneous introspection studies in the form of think-aloud protocols first carried out by Krings, Zimmermann and Schneider, and in Poland, by Gabryś-Barker (for an overview of studies from 1998 onwards, see Gabryś-Barker, *Aspects*).

Data collection methods and tools have quickly expanded, due to technological interventions in language processing, comprehension and production, which were vividly demonstrated by Rayner in his eye movement experiments employing eye-tracker equipment and programmes. Eye-tracking is a method gaining even more recognition and popularity nowadays, and it is worth emphasizing that Polish scholars and scientists now widely use eye-tracking as a major research methodology (for an updated overview see Kiliańska-Przybyło, Ślęzak-Świat). Also directly derived from technological developments, this time in neurosciences, neuroimaging techniques have moved from clinical research of patients with brain lesions to research in psycholinguistics related to brain activation in language processing, timing of the process and responses to different types of stimuli (e.g. Hagoort, Brown and Swaab; Obler and Gjerlow; for more details see Table 3). Information technology has also contributed to the creation of computational modeling in for example word-recognition tasks or speech perception (Coltheart et al.; McClelland and Elman).

Different types of experimental study constitute the backbone of psycholinguistic research as it is claimed that the recognition of psychology itself as a scholarly domain is due to its use of an experimental approach. This is seen as the most rigorous and complex type of quantitative research (Brzeziński). Experimental research in psycholinguistics is considered by many scholars as the only way of arriving at new theories and models explaining language comprehension and production issues. It even claims to be a reliable tool in measuring affective factors in language study. The use of experimental designs presupposes the implementation of statistical analysis (Hatch and Lazaraton), which is also widely used outside experimental studies of large samples. Table 3 outlines and summarises the major trends in this area defining the method, its research focus and referencing its pioneering researchers.

Table 3: Research methods in psycholinguistic research related to (language) education

Method	Description/tools	(Pioneering) researchers
Behavioristic methods	— behavioural tasks: S-R (e.g. lexical focus); — error analysis (e.g. in language production, example reaction times in lexical decision tasks).	Corder (“The Significance”) Selinker Forster and Chambers Fischler Arabski
(Information) Technology-based research	— research on language processing in comprehension and production; — eye-tracking technique; — computational modelling in word-recognition tasks; — speech perception models, e.g. TRACE.	Rayner Coltheart et al. McClelland and Elman
Neuroimaging	neuroimaging techniques: — PET (positron emission tomography) to localize different neural functions; — fMRI (functional magnetic resonance imaging) to show which areas of the brain are activated at any given moment; — ERP (event related potential) focusing on the timing aspect of brain activation rather than the areas activated; — EEG (recording of the natural rhythms of the brain) to give evidence of the timing of neural processing in response to a certain external stimulus (e.g. visual).	Hagoort et al. Paradis (“The Neurolinguistics”)
Experimental design	— effectiveness of various teaching methods; — various areas of language and skills development; — individual language differences, personality features; — statistical analysis.	Hatch and Lazaraton Pawlak and Mystkowska-Wiertelak Piechurska-Kuciel (“Self-regulatory” and <i>The Big Five</i> ) Dewaele (“Psychological”)
Retrospective methods	— individual reflection on the issues investigated by means of simultaneous and delayed introspection, and retrospection (and combination of them); — focus on language processing; — learning strategies, strategies in text processing (reading, translation); — lexical search; — affective states in language comprehension and production.	Krings Zimmermann and Schneider Gabryś-Barker ( <i>Aspects</i> )

Method	Description/tools	(Pioneering) researchers
Eclectic approach (mixed-methods research)	mixed-method research (quantitative–qualitative data): — laboratory type of studies (e.g. eye-tracking), experimental paradigms with statistical analysis; — retrospective methods (e.g. simultaneous introspection); — qualitative research based on (autobiographical) narratives and diaries, ethnographic research, case studies.	Tashakkori and Teddlie Dewaele (“Investigating” and <i>Emotions</i> ) Gabrys-Barker ( <i>Aspects</i> and <i>Reflectivity</i> )

Even a very cursory overview of research methods used in current applied psycholinguistic projects demonstrates that there is a much broader range of methods used and research paradigms followed now, allowing for both quantitative, qualitative and mixed-method approaches, with emphasis on the latter. In terms of context, it is not only generalisable research-creating models and theories, but also more idiosyncratic and unique to the context investigations are being promoted. One of the aspects of this idiosyncratic focus is research in educational settings (e.g. action research) and teacher training (e.g. student research projects). Such an approach is acknowledged, provided it offers an appropriate methodology and rigour in data collection, analysis and interpretation.

### 3. Applied psycholinguistics concepts basic to FL education

From my own perspective as an experienced FL teacher and teacher trainer, and a language learner as well as researcher, the above-outlined aspects and themes of applied psycholinguistic research have been selected as those believed to be fundamental to current language education.

The following issues will be important for the FL learner and teacher:

- the cognitive aspects of language learning and teaching related to issues of language contact, for example crosslinguistic consultations (language transfer), language errors and their impact (an indication of language progress);
- the affective dimension of learning a language expressed in the role of emotions, self-efficacy, motivation and attitudes;
- explanations of mechanisms of learning through instruction; for example, learning and communication strategies, autonomy in learning and “learning to learn”, language and metalinguistic awareness;
- the role of an individual approach to the learner in emphasis on individual learner differences and autonomy;

— significance of social and cultural aspects of language use; for example communication in different cultures, such as developing intercultural communicative competence and appropriate behavioural patterns.

The issues that can be singled out as fundamental to FL teacher training and mentoring practices focus on:

— learner/teacher awareness of both cognitive and affective dimensions of the teaching/learning process;

— the role of research in educational settings; for example, action research and its implementation at the initial stages of professional development of FL teachers (pre-service),

— (FL) teacher and learner well-being.

The developments described in this overview that seem to change perspectives on psycholinguistic research both in terms of its content focus and methodology refer to the:

— emergence of second language acquisition as a field of study, and later on, multilingualism drawing on psycholinguistic research;

— development of the multidisciplinary character of educational research based on the interdisciplinarity of psycholinguistics;

— development of mixed-methods and legitimisation of qualitative methodologies as valid research tools;

— focus on the individual in case studies and not just on large sample research projects.

The scholars who in my view can all be singled out as contributing to an interdisciplinary understanding of psycholinguistics and who have impacted in a variety of ways the development of language education, both theoretically and practically, are enumerated below. They come from different scholarly (sub)disciplines and in this way demonstrate the multidisciplinary character of psycholinguistics (Table 4).

Table 4: Selected scholars and their (multiple) contributions to language instruction of psycholinguistic research (in chronological order)

Name	Research focus	FL education relevance
B. Skinner (psychologist)	verbal behaviour	— audiolingual method; — approach to errors; — drill as the basic language activity; — creating language habits.
A. Maslow (psychologist)	a hierarchy of needs	— basic needs to be fulfilled first; — need for creativity and self-fulfilment.
R. C. Gardner, W. E. Lambert (psychologists) Z. Dörnyei (applied linguist)	motivation	— focus on motivational classroom techniques; — creating appropriate classroom climate; — development of teacher and learner autonomy; — individualised teaching.

Name	Research focus	FL education relevance
D. Hymes (sociolinguist, anthropologist)	communicative competence	— communicative approaches to language instruction; — role of interaction; — immersion in language.
S. Krashen (linguist)	the Monitor Model	— acquisition versus learning; — role of different types of input; — affectivity in language development.
G. Lakoff, M. Johnson (linguists)	language as a metaphor	— a cognitive approach to understanding language; — intercultural competence in language learning.
P. MacIntyre (psychologist)	willingness to communicate	— establishing factors conducive (or otherwise) to communication.
R. Oxford (applied linguistic/ psychologist)	learning strategies	— learner training in language learning; — self-awareness of a learner; — role of metacognition and learning strategies.
M. Seligman (psychologist)	positive psychology	— conditions conducive to learner/ teacher development: positive emotions and relations, enabling institutions (schools); — accentuating one's strong points; — dealing with stress.
Aneta Pavlenko (a sociolinguist)	affective dimension in language functioning	— issues of bilingual identity; — role of culture in language functioning.
Jean-Marc Dewaele (applied linguist)	affective dimension in language functioning	— different emotions and their impact on engagement and success (enjoyment, boredom); — expression of emotions in different languages (L1, L2, Ln).
Jasone Cenoz (applied linguist/ educationalist)	multilingualism	— studying multiple languages— educational policies; — translanguaging as pedagogy.
Sarah Mercer (educationalist/psychologist)	well-being	— awareness of one's well-being; — different aspects of teacher and learner well-being in and beyond the classroom.

#### 4. Concluding remarks

It is apparent that (applied) psycholinguistics as a more eclectic and open discipline has made great strides over the decades since its foundations in the 1950s. It got

out of the “ivory tower” of its first scholarly realisations with the emergence of its subdisciplines and with the full rigour required of (academic) research. At the same time, it reinforced its position by expanding and going beyond the strict boundaries of academic research. It also consolidated its position in language instruction and practice. In the context of educational settings, new forms of research that emerged, such as, for example, action research, gave credit to the role of scholarly disciplines as the basis for investigating FL classroom issues but carried out by practitioners as well as academics. It has been an important contribution—introducing the teacher as a researcher—to the professional development of FL teachers, which should be done as early as the pre-service teacher training stage. This can be carried out in the form of research projects for BA/MA/PhD theses (for an example, see Gabryś-Barker, *Reflectivity*).

To conclude the earlier presentation of selected themes and approaches demonstrating the dynamics of both psycholinguistic research and its more practical application in language instruction, the most visible and significant changes are pointed out here:

— The development from general models and patterns of understanding language itself, learning and acquisition as well as its teaching to focus on the individual and unique occurrences of different phenomena, more idiosyncrasy than generality.

— The movement from focusing on group characteristics (though still going strong in terms of statistical research) to acceptance of research on individuals with their unique profiles.

— Expanding the research paradigm derived from laboratory-controlled studies, supplemented by the open-ended paradigms of qualitative methods.

— Going beyond academic-type research by trained professional researchers (linguists, psychologists, sociolinguists, neurolinguists) and expanding it to more classroom-based research both by academic scholars but also teachers themselves.

— An expansion of in-house academic research to awareness-raising in classroom research, resulting in significant implications for and applications in the learning/teaching practice.

It has been very difficult to select different areas and research achievements in this very brief overview of (applied) psycholinguistics as a research domain. While writing this synopsis, new ideas and areas of interest offered themselves for discussion. Unfortunately, quite a lot of important achievements in (applied) psycholinguistics related to language learning had to be left out for reasons of space. As a result, this selection may appear culpably incomplete, but it nevertheless represents my firm belief about the field’s importance for FL teachers, teacher trainers and FL learners (users).



## References

- Arabski, J. 1979. *Errors as Indications of the Development of Interlanguage*. Katowice: Uniwersytet Śląski.
- Asher, J. 1969. "The Total Physical Approach to Second Language Learning." *The Modern Language Journal* 53.1. 3–17.
- Brzeziński, J. 2008. *Badania eksperymentalne w psychologii i pedagogice*. Warszawa: Scholar.
- Budzińska, K. and O. Majchrzak (eds.). 2021. *Positive Psychology in Second and Foreign Language Education*. Cham: Springer.
- Callan Method Organisation. "The Callan Method." Retrieved from <https://callan.co.uk/the-method/>. 8 Jul. 2022.
- Chomsky, N. 1965. *Aspects of the Theory of Syntax*. Cambridge: MIT.
- Coltheart, M. et al. 1993. "Models of Reading Aloud: Dual-route and Parallel-distributed Processing Approaches." *Psychological Review* 100.4. 589–608.
- Corder, P. 1967. "The Significance of Learner's Errors." *International Review of Applied Linguistics* 5. 161–70.
- . 1981. *Error Analysis and Interlanguage*. Oxford: Oxford UP.
- Curran, Ch. 1976. *Counselling-learning in Second Languages*. Apple River, IL: Apple River.
- Dewaele, J. M. 2002. "Psychological and Sociodemographic Correlates of Communicative Anxiety in L2 and L3 Production." *International Journal of Bilingualism* 6.910. 23–38.
- . 2005. "Investigating the Psychological and Emotional Dimensions in Instructed Language Learning: Obstacles and Possibilities." *The Modern Language Journal* 89.3. 367–80.
- . 2010. *Emotions in Multiple Languages*. London: Palgrave Macmillan.
- Ehrman, M. E., B. L. Leaver and R. L. Oxford. 2003. "A Brief Overview of Individual Differences in Second Language Learning." *System* 31. 313–30.
- Ellis, R. 1985. *Understanding Second Language Acquisition*. Oxford: Oxford UP.
- Fischler, I. 1977. "Semantic Facilitation Without Association in a Lexical Decision Task." *Memory and Cognition* 5.3. 335–39.
- Forster, K. and S. Chambers. 1973. "Lexical Access and Naming Time." *Journal of Verbal Learning and Verbal Behaviour* 12.6. 627–35.
- Gabryś-Barker, D. 2005. *Aspects of Multilingual Storage, Processing and Retrieval*. Katowice: Uniwersytet Śląski.
- . 2009. "Emotion Versus Cognition, or What Psycho and Neurolinguistics Tell Us about Affectivity in Second Language Acquisition." In: Arabski, J. and A. Wojtaszek (eds.). *Neurolinguistic and Psycholinguistic Perspectives on Second Language Acquisition*. Bristol: Multilingual Matters, 44–63.
- . 2012. *Reflectivity in Pre-Service Teacher Development: A Survey of Theory and Practice*. Katowice: U of Silesia P.
- . 2013. "The Affective Dimension in Multilinguals' Language Learning Experiences." In: Gabryś-Barker, D. and J. Bielska (eds.). *The Affective Dimension in Second Language Acquisition*. Bristol: Multilingual Matters, 68–99.
- (ed.). 2015. *Topics in Applied Psycholinguistics*. Katowice: Uniwersytet Śląski.
- Gabryś-Barker, D. and D. Gałajda (eds.). 2015. *Positive Psychology Perspectives on Foreign Language Learning and Teaching*. Cham: Springer.
- Gardner, H. 2011 [1983]. *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic.
- Gardner, R. C. and W. E. Lambert. 1972. *Attitudes and Motivation in Second Language Learning*. Rowley, MA: Newbury.
- Gattegno, C. 1963. *Teaching Foreign Languages in Schools: The Silent Way*. New York: Educational Solutions.
- Goleman, D. 1996. *Emotional Intelligence: Why It Can Matter More than IQ*. London: Bantam.

- Gregersen, T. and P. MacIntyre. 2014. *Capitalizing on Language Learners' Individuality: From Premise to Practice*. Bristol: Multilingual Matters.
- Hagoort, P., C. M. Brown and T. Y. Swaab. 1978. "Lexical Semantic Event-related Potential Effects in Patients with Left Hemisphere Lesions and Aphasia, and Patients with Right Hemisphere Lesions and Aphasia." *Brain* 119. 627–69.
- Hatch, E. (ed.). 1978. *Second Language Acquisition*. Rowley, MA: Newbury.
- Hatch E. and Lazaraton A. 1991. *The Research Manual. Design and Statistics for Applied Linguistics*. Boston: Heinle.
- Hymes, D. 1966. "Two Types of Linguistic Relativity." In: Bright, W. (ed.). *Sociolinguistics: Proceedings of the UCLA Sociolinguistics Conference, 1964*. The Hague: Mouton, 114–58.
- Kiliańska-Przybyło, G. and A. Ślęzak-Świat. 2021. Rev. of *Eye Tracking in Second Language Acquisition and Bilingualism: A Research Synthesis and Methodological Guide*. By A. Godfroid. *Digital Scholarship in Humanities* 36.1. 243–46.
- Krashen, S. 1988. *Second Language Acquisition and Second Language Learning*. Hoboken, NJ: Prentice-Hall International.
- Krings, H. 1986. "The Use of Introspective Data in Translation." In: Faerch, K. and G. Kasper (eds.). *Introspection in Second Language Research*. Philadelphia: Multilingual Matters, 159–76.
- Kurcz, I. 2005. *Psychologia języka i komunikacji*. Warszawa: Scholar.
- Lakoff, G. and M. Johnson. 1980. *Metaphors We Live By*. Chicago: Chicago UP.
- Lee, F. 2019. "The Differences between Cognitive and Psycholinguistics." Retrieved from <https://www.theclassroom.com/differences-between-cognitive-psycholinguistics-8477975.html>. 4 Feb. 2021.
- Lozanov, G. 1971. *Sugestologija*. Sofia: Nauka i Izkustvo.
- MacIntyre, P. 2007. "Willingness to Communicate in the Second Language: Understanding the Decisions to Speak as a Volitional Process." *The Modern Language Journal* 91.4. 564–76.
- MacIntyre, P., T. Gregersen and S. Mercer (eds.). 2016. *Positive Psychology in SLS*. Bristol: Multilingual Matters.
- Maslow, A. 1943. "A Theory of Human Motivation." *Psychological Review* 50.4. 370–96.
- . 1954. *Motivation and Personality*. New York: Harper.
- McClelland, J. and J. Elman. 1986. "The TRACE Model of Speech Perception." *Cognitive Psychology* 18.1. 1–86.
- Mercer, S. and S. Williams. 2014. *Multiple Perspectives on the Self in SLA*. Bristol: Multilingual Matters.
- Mercer, S. and T. Gregersen. 2021. *Teacher Wellbeing*. Oxford: Oxford UP.
- Mininni, G and A. Manuti (eds.). 2012. *Applied Psycholinguistics: Positive Effects and Ethical Perspectives*. Vol. 1. Milano: Angeli.
- Moskowitz, G. 2004. *Caring and Sharing in the Foreign Language Class: A Sourcebook on Humanistic Techniques*. New York: Newbury.
- Obler, L. K. and K. Gjerlow. 1999. *Language and the Brain*. New York: Cambridge UP.
- Osgood, Ch. and T. Sebeok. 1954. *Psycholinguistics: A Survey of Theory and Research Problems*. Baltimore: Waverly.
- Paradis, M. 2000. "The Neurolinguistics of Bilingualism in the Next Decades." *Brain and Language* 71. 178–80.
- . 2004. *A Neurolinguistic Theory of Bilingualism*. Amsterdam: Benjamins.
- Pawlak, M. and A. Wiertelak-Mystkowska. 2015. "Investigating the Dynamic Nature of L2 Willingness to Communicate." *System* 50. 1–9.
- Piechurska-Kuciel, E. 2016. "Self-regulatory Efficacy in Foreign Language Attainment." In: Gabryś-Barker, D. and D. Gałajda (eds.). *Positive Psychology Perspectives on Foreign Language Learning and Teaching*. Cham: Springer, 337–51.
- . 2021. *The Big Five*. Cham: Springer.

- Pinto, M. G. 1999. *15<sup>th</sup> International Congress of the International Society of Applied psycholinguistics. Proceedings*. Porto: Faculdade de Letras da Universidade do Porto.
- Pronko, N. H. 1946. "Language and Psycholinguistics: A Review." *Psychological Bulletin* 43.30. 189–239.
- Puppel, S. 2001. *A Consise Guide ot Psycholinguistics*. Poznań: Wydawnictwo Poznańskie.
- Rayner, K. 1978. "Eye Movements in Reading and Infromaiton Processing." *Psychological Bulletin* 85.3. 618–60.
- Schumann, J. 1997. *The Neurobiology of Affect in Language*. Oxford: Blackwell.
- Seligman, M. 2011. *Flourish: A Visionary New Understanding of Happiness and Well-Being*. New York: Free.
- Selinker, L. 1972. "Interlanguage." *International Review of Applied Linguistics and Language Teaching* 10. 209–41.
- Skinner, B. 1957. *Verbal Behavior*. Acton, MA: Copley.
- Tashakkori, A. and C. Teddlie (eds.). 2003. *Handbook of Mixed Methods in Social and Behavioural Research*. Thousand Oaks, CA: Sage.
- Tannen, D. 1986. *That's Not What I Meant! How Conversational Style Makes or Breaks Relationships*. New York: Ballantine.
- . 1989. *Talking Voices: Repetition, Dialogue, and Imagery in Conversational Discourse*. Cambridge: Cambridge UP.
- Witkowski, T. 2010. "Thirty-five Years of Research on Neuro-Linguistic Programming. NLP Research Data Base: State of the Art or Pseudo-scientific Decoration?" *Polish Psychological Bulletin* 41.2. 58–66.
- Zimmermann, R. and K. Schneider. 1986. "The Collective Learner Tested: Retrospective Evidence for a Model of Lexical Search." In: Faerch, K. and G. Kasper (eds.). *Introspection in Second Language Research*. Philadelphia: Multilingual Matters, 177–96.