Challenges and Prospects of Studying Cognitive Styles and Strategies of Bilingual Children

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Abstract. In modern methods of teaching foreign languages, there is a special interest in the study and implementation of a cognitive approach to teaching. One of the significant characteristics of the cognitive process of an individual is the cognitive style. The study of cognitive styles of bilinguals can become a source of valuable information both for the theory of bilingualism and for the methods of teaching the second language. Cognitive style becomes the basis for a certain cognitive strategy. The paper deals with the range of problems arising in the study of cognitive styles and strategies of bilingual children, and identifies possible solutions.

The main problems include the complexity of the definition of "cognitive style" according to its multi-component nature; the need to take into account the peculiarities of bilinguals' cognitive styles when considering both speech perception and performance; undeveloped linguistic classifications of cognitive styles; the lack of generally accepted methods for the cognitive styles study on linguistic material, as well as for ethnocultural features of cognitive styles. Based on the analysis of some existing classifications of cognitive strategies it is concluded that the hierarchy of cognitive strategies of foreign pupils studying Russian is different from the hierarchy of cognitive strategies of Russian-speaking students, learning the Russian language as the science (Linguistics).

Collecting data on the peculiarities of cognitive styles and strategies of bilingual children will have great practical significance, as it will improve the methods of teaching a non-native language, in particular, within the framework of the topical ethnocognitive approach to teaching.

Keywords – cognitive style, cognitive strategy, bilingual, methods of teaching Russian as a non-native language.

I. INTRODUCTION

Today many researchers consider the problems of teaching children Russian as a foreign, non-native, second language, and the relevance of these problems is not in doubt.

The problem of teaching migrant children in Russian schools is large due to organizational difficulties. The researchers are trying to create methods that allow teaching children of migrants and Russian-speaking children at the same time at Russian lessons, but today this idea seems utopian. The additional corrective training is more real, but the possibility of its implementation is also limited. Most often it is organized for students of a certain parallel, for example, for seventh graders. At the same time, children of different nationalities with different levels of Russian language proficiency may be in the group. In such circumstances, personality-oriented learning, in which a cognitive approach can be implemented, allows to make studies more effective.

As a rule, in the papers about teaching Russian as a non-native language, the question of the formation of bilingualisms raised. Bilingualism is defined as the purpose of teaching children a non-native language. In this regard, the interest in the study of bilingual personality increased, in particular, the study of the features of its cognitive development. Cognitive science as an interdisciplinary phenomenon allows expanding the area of research activity and sharing the scientific results of all humanitarian disciplines. The study of mental processes, mechanisms of knowledge becomes a relevant research direction.

Cognitive processes form the basis of the educational activity of the student: using the mechanisms of cognition the certain skills are created, which later turn into abilities by protracted repetition. The quality of the received ability determines the result of the whole studying – the level of the formed competences. Working with bilingual children, the cognitive aspect becomes doubly relevant because the process of language learning is a necessary condition for the overall development of the child, that is, cognitive activity acts as a condition for cognitive development. It is important to study comprehensively the cognitive characteristics of bilingual children to organize the learning process more effectively and to predict its results more accurately.

One of the significant characteristics of the cognitive process of the individual is the cognitive style. The importance of taking into account the individual cognitive style is emphasized in the description of the system of levels of foreign language proficiency “Common European Framework of Reference for Languages: Learning, Teaching, Assessment”[7].

There are different points of view on the foundations of cognitive style. The most common of them is that the cognitive style correlates with the characteristics of temperament. However, it is often said about the connection with individual motivation, intelligence, and hemispheric asymmetry. In this regard, it is important to study the
cognitive styles of bilinguals, because it can become a source of valuable information for both the theory of bilingualism and the methods of teaching a second language.

In addition, it is necessary to use cognitive strategies skillfully in accordance with the stated academic goals for a certain category of students, in our case, children learning Russian as a non-native language. There are many classifications of learning strategies. In our view, a special hierarchy should be created out of the existing diversity for the education of a particular group. In this hierarchy, priority should be given to strategies that are more responsive to the abilities and needs of students.

The purpose of this article is to outline the range of problems arising in the study of cognitive styles and strategies of bilingual children, and to identify possible solutions.

II. THEORETICAL BACKGROUND

Cognitive approach in teaching a foreign language arouses great interest in science. Studies confirm that bilingual children’s cognitive functions, such as attention, perception, thinking, memory, are better developed than monolinguals’ [2, 8]. Accordingly, the question arises how to use this advantage for methodological purposes in the case when bilingualism is already largely formed, and how to realize the cognitive approach in the process of teaching a non-native language.

The cognitive approach in teaching a foreign language has been considered by many researchers [11, 13], however, a cognitive approach in teaching children was not almost addressed, in particular, in teaching children in the environment of the studied language.

To date, there is no unity of opinions among researchers in determining the essence of the cognitive approach in teaching. In the “New Dictionary of Methods Terms and Concepts” E.G. Azimov and A.N. Shchukin give the following definition: “cognitive approach is an approach to teaching, based on the provisions of cognitive psychology and providing in the studying process the basis of the principle of consciousness, taking into account the different cognitive styles specific to students of a particular academic group, and learning strategies that they use” [1, p. 96]. According to this definition, the cognitive approach involves the study of individual cognitive styles of students, that is, the features of their cognitive process.

Here we are faced with a terminological problem. The concept of cognitive style is multifaceted. In the “New Dictionary of Methodics Terms and Concepts”, the authors define a cognitive style as 1) relatively stable individual characteristics of cognitive processes of the subject, which are expressed in the cognitive strategies used by him; 2) a set of private cognitive settings or types of control established by a set of specially selected tests [1].

N.S. Bolotnova reflects another approach to the definition of cognitive style, in particular, in the conception of the communicative style of the text. The author writes that the cognitive style is logically considered as linguistically and extralinguistically represented and discursively conditioned mental form of reflection of the general idiostyle of the linguistic personality, which determines the specificity of its primary and secondary textual activity [3].

The consideration of cognitive style from the perspective of linguistics involves an appeal to the concept of linguistic personality and, in connection with the purpose of this article, to the concepts of secondary and bilingual linguistic personality. Speaking of linguistic personality, we will follow the classical definition of Yu.N. Karaulov, according to which a linguistic personality is a person expressed in language (texts) and through language, there is a person reconstructed in its main features on the basis of linguistic means [6].

The ambiguity of the concept of cognitive style determines different approaches to the classification of cognitive styles. In psychology, this phenomenon is considered a characteristic of the cognitive process, the generally accepted classifications determine the peculiarities of perception and processing of information. Traditionally, on this basis, such cognitive styles are distinguished: field independence — utility dependence, narrow — wide range of equivalence, impulsivity — reflectivity, smoothing — sharpening, rigid — flexible cognitive control, low — high tolerance to unrealistic experience, focusing — scanning control, specificity — abstraction, cognitive simplicity — complexity.

From the point of view of speech production, psychologists usually consider cognitive styles as ways of coding information: verbal, visual, subject-practical and sensory-emotional.

In linguistics, the theory of cognitive styles is not developed enough; the available researches are mainly focused on the analysis of individual or group styles. For example, E.A. Pogodaeva examines the cognitive styles of business people [10].

In our opinion, if the psychology of cognitive styles is sufficiently studied, the main methods of research are identified (although we will specify that information about the interaction and mutual influence of cognitive styles is contradictory), in linguistics the ways of their analysis are only outlined. For instance, N.S. Bolotnova describes basic linguistic areas of study [3].

Cognitive style determines the choice of educational, in particular, cognitive, strategies. Currently, there are different approaches to the definition of cognitive strategies in science. We again appeal to the “New Dictionary of Methodics Terms and Concepts” edited by E.G. Azimov and A.N. Shchukin. They give the following definition: “mental processes aimed at processing information for learning purposes; focused on the assimilation, storage and retrieval of information from memory; lexical strategies, which are part of the communicative competence, are aimed, for example, at finding the meanings of the word, visual correspondences, selection and accumulation of lexical means, expanding the lexical base, etc.” [1, p. 96].
R. Oxford distinguishes cognitive strategies as a subspecies of educational and cognitive along with strategies based on the mechanisms of human memory, and compensatory strategies – all three subspecies are basic [9]. Concerning the acquisition of a foreign language, A.V. Shchepilova understands cognitive strategies as behaviour and mental operations carried out by the trainees for the codification of a new language. It is the way of selecting, acquiring, organizing and integrating new knowledge[12]. There are other approaches to the definition of cognitive strategies – from the point of view of the theory of knowledge, cognitive linguistics, business communication, etc. – but the researchers agree that cognitive strategies affect the formation of communicative competence, i.e. the ability to build successful communication.

The hierarchy of types of cognitive strategies that should be applied in the acquisition of a non-native language in a specially organized learning environment will be significantly different from the hierarchy of strategies required in the school study of the native language.

The basis of teaching strategies is learning activities, according to their contents, determining how to accomplish specific educational objectives. In the process of learning activities, students first master the ways of solving simple problems, gradually increasing the degree of complexity and tasks become multi-level. This complexity, multi-level tasks that students have to solve in the learning process, lead to the complexity and branching of existing classifications of educational, in particular, cognitive, strategies. In this paper, we will look at some existing classifications to highlight strategies that will prevail in the acquisition of the Russian language as a non-native in the Russian school.

Diversity of the selected types of cognitive strategies is determined by a variety of prerequisites for their use: field, sphere, purpose, etc. In accordance with the stage of training, A.V. Shchepilova divides cognitive strategies into:

a) conceptualization strategies – used for understanding and formation of the concept; identification of certain features; establishment of correlations; classification of facts; conclusions by logical induction/deduction; generalization; systematization; interpretation; critical evaluation; detail; design for previous experience; anticipation; use of resources; translation.

b) mnemonic strategies – serve at the phase of memorization: repetition; associative memorization; classification; schematic systematization; outlining; use in context [8].

The classification of A.V. Shchepilova is applicable to the study of native and non-native language (except the translation strategy).

In our opinion, one of the most successful linguistic and methodological classifications of cognitive strategies belongs to M.V. Daver, who, based on the work of R. Oxford, systematizes educational strategies for the stages of development of new material: planning, execution, evaluation and application [5]. This classification will be considered in terms of teaching pupils Russian as a second language.

III. METHOD

In this paper, the actual and reputable in modern Russian methodological works were analyzed (the analyzed works are listed in references). Using descriptive and analytical methods, we investigated the presentation of the concepts of “cognitive style”, “cognitive strategies”, “cognitive approach to studying”, classifications of cognitive styles and strategies. Being aware that this is far from a complete review, we consider it sufficient to highlight the key problems in this area of research.

IV. RESULTS AND DISCUSSION

Thus, if we follow the definition of E.G. Azimov and A.N. Shchukin, a cognitive approach to teaching a non-native language can be implemented in the case of taking into account the achievements of cognitive psychology, including individual cognitive styles and cognitive strategies. However, in our opinion, in the field of language education a cognitive approach can be considered in a broader sense, if the training takes into account the basic provisions of not only cognitive psychology but also cognitive linguistics. Since language is a reflection of the cognitive experience of the people, the child, faced with a non-native language, is in contact with new cognitive experience (in that part of the language system, which is not universal, and the existence of the universal part itself is controversial). In order to master a non-native language fully, to become a bilingual, it is necessary to assign the cognitive experience of other people, reflected in the language. The child possesses the cognitive basis of specific linguistic and cultural communities. In this sense, the cognitive approach to teaching is close to the linguoculturological approach. If the linguoculturological approach considers the cultural specificity of linguistic phenomena, the cognitive approach analyzes linguistic units from the point of view of the experience of a particular nation – a native speaker.

For example, the concept “sun” has positive connotations for Russian people, unlike its assessment in many southern and eastern cultures. This specificity of cognitive experience of peoples can be reflected, for example, in such tasks for the Uzbek audience:

1. In Russian folk tales, songs, proverbs “солнце” is usually called “солнышко”. How do you think, why it is so? What part of the word tells you how Russian people are disposed to the sun?

2. Translate into your native language the word “солнце”. Is it possible to translate the word “солнышко” into it? Why do you think there is no such word in your native language? Compare the attitude to the moon in your culture with the attitude to the sun in Russian culture.

3. How do you understand the Russian proverb “Чтото молчат – светилюблюсылышко”? Are there proverbs about the sun in your native language?

4. In Russian folk tales we often found the phrase “красносолнышко”. How do you understand it?
5. In the stories of the heroes – strong, intelligent and kind people who defended the Russian land, one of the heroes was called Vladimir Red Sun (“Владимир Красное Солнце”). He was the Prince who ruled Russia. Why do you think “red sun” was added to his name?

6. Make a story about the sun in Russian and in your native culture.

In our opinion, if we consider certain linguistic aspects, the most effective cognitive approach to teaching a non-native language can be implemented on the material of vocabulary and phraseology. It is important to pay attention both to the process of speech production and the linguistic basis for the implementation of the cognitive approach. But also, the ethnopsycholinguistics aspect of the cognitive approach must be taken into consideration. Within teaching children Russian as a non-native language, this aspect involves:

- a) consideration of such issues as the existence of national peculiarities of the cognitive process and their account in language education,
- b) the reflection of the specifics of the cognitive base of the people in the language,
- c) the choice of optimal methods and techniques for forming this base.

The analysis of the definitions of the cognitive approach showed that this approach is personality-oriented, which is extremely relevant in the conditions of multi-ethnic classes and different age and different level groups of students with Russian as a non-native language. The cognitive approach makes it possible not only to teach a non-native language as effectively as possible, but also to promote the cognitive development of the child. However, there is no unity in the definition of the key concepts of the cognitive approach in language learning.

Thus, our analysis has identified two approaches to the definition of cognitive style represented in the works of researchers:

1) cognitive style as the characteristic of cognitive process, perception and information processing;

2) cognitive style as a characteristic of the process of speech production, verbal clearance result of a cognitive process, verbal behavior of the individual.

In researches by Russian scholars, cognitive styles of bilingual linguistic identity are not analyzed. Moreover, there is no consensus about the definition of the concept “bilingual linguistic personality”.

If we start from the classical definition of linguistic personality by Yu.N.Karaulov [6], bilingual linguistic personality can be defined as the identity expressed in first and second languages, and through them, reconstructed historically on the basis of the language means of the first and second languages. Note that this understanding is not determined by language proficiency. If we consider bilingual fluency in two or more languages, bilingual linguistic personality is essentially a two-piece formation, which unites two linguistic identities. The formation of the bilingual linguistic personality in the meaning of the term is possible only in conditions of natural or naturally-educational bilingualism, when the child masters two languages, two pictures of the world, two cognitive bases simultaneously, for example, growing up in a bilingual family. Bilingual linguistic personality matches coordinative type of bilingualism. However, if we consider bilingualism as speaking two languages without accordance with the level, the bilingual linguistic personality does not always combine two linguistic identities. Therefore, for subordinative and mixed bilingualism a picture of the world is verbalized by two or more codes (languages).

In the case of the formation of bilingualism in the educational context and/or at a later age we are talking about the formation of secondary linguistic personality, which is formed as a result of the overlay of appropriated cognitive base of non-native language on the existing base of the native language. Thus, the total area that contains cultural universals expands. Cognitive base and database are complicated by elements of a new worldview.

In connection with the above, the definition of cognitive style of bilingual linguistic personality can be the following: linguistically and extra-linguistically represented, conditioned by discourse mental form of reflection of the general idiostyle of bilingual linguistic personality, which determines its specific speech activity in the language.

Cognitive style is important in the perception and speech production. We can also say that the speech is a reflection of cognitive style as characteristic of cognitive process. That is, the approaches to the definition of cognitive style are closely interrelated and must be considered in interaction, including in the study of cognitive styles of bilingual children. In this case, it is advisable to examine psychological characteristics of the child related to the process of cognition, and the texts produced by bilinguals, which can provide information about the mental characteristics that affect speech. Information about the features of cognitive process will allow clarifying the requirements for educational materials, and cognitive characteristics of representative speech processes will allow adjusting the learning process to prevent a variety of errors.

From the position of the study of bilingualism, it is necessary to consider both the psychological and the linguistic classification of cognitive styles. Taking into account the insufficient development of the linguistic component, it is important to determine what kind of classification should be put in the basis of the study.

When working with children, special importance is attached to practical conclusions, respectively, the study of cognitive styles based on a specific classification should give the information important for the organization of the learning process. The main question is what are the characteristics of the cognitive styles of bilingual children compared to monolingual? This question has not yet received experimentally confirmed and theoretically sound response, though the fact of significant influence of bilingualism on cognitive development of the individual was recorded in numerous studies of domestic and foreign scholars [2, 8, 14, 16].
The problem of the choice of classification, which could be based on the research, entails the problem of choosing the method. Here we are also faced with sufficient elaboration of the psycho-diagnostic methods of cognitive styles study (see, for example, [4, 15] “hidden figures” and others) and the need to develop methods of cognitive styles study on the linguistic material. The latter can be carried out by the cognitive analysis of speech errors, modeling conceptual structure of the speaker and the conceptual structure of the speech, analysis of the structure, semantics, and pragmatics of the text. To work with the bilinguals the method of error analysis can be particularly revealing, however, to obtain objective results it is necessary to combine different research methods.

The study of the ethno-cultural characteristics of the cognitive styles of bilingual individuals is also important. This direction is completely new, and not widely available in the scientific literature. Previously the relationship of cognitive styles with hemispheric asymmetry was considered, but this idea was not developed. L. F. Zhan described cognitive styles of students from different regions of the world (Northern and Southern Europe, North America, Southeast Asia) and found significant differences [16]. Probably, such features can be identified in students studying Russian as a non-native language. We believe that further study of the relationship of cognitive styles with ethnicity can give interesting results. In teaching Russian as a non-native language, it will be effective to take into account the national specifics of the choice of cognitive styles. The repertoire of cognitive styles is associated with a system of values, as they are the basis for processing information coming from outside. Since cognitive styles determine the mastery of the world picture and, further, the formation of the language world picture, it is obvious that the cognitive approach should be taken into account in the practice of teaching a non-native language. At the same time, it is important not only to make the most effective use of cognitive styles preferred by specific students, but also to expand the possibilities of using other styles, which is necessary for the development of cognitive abilities of schoolchildren.

So, the main problems of the study of cognitive styles of bilingual children include:
- the complexity of the definition of the concept of “cognitive style” according to its multi-component nature;
- the need to take into account the peculiarities of cognitive styles of bilinguals when considering both perception and speech production;
- undeveloped linguistic classifications of cognitive styles;
- the lack of generally accepted methods for the study of cognitive styles on linguistic material, as well as of ethnocultural features of cognitive styles.

Cognitive style determines the choice of learning strategy. There are different classifications of learning strategies with different number of components. From the standpoint of the cognitive approach, cognitive strategies are important, as well as special strategies related to the study of certain linguistic aspects. Cognitive strategies include those that provide common cognitive processes: repetition, collaboration, organization. Out of all the diversity, a special hierarchy should be created for the teaching a particular group, in which strategies that are more responsive to the abilities and needs of students in accordance with the preferred cognitive style take precedence. Accordingly, methods and techniques that are optimal for specific trainees can be proposed.

The hierarchy of types of cognitive strategies that should be applied in the acquisition of a non-native language in a specially organized learning environment will be significantly different from the hierarchy of strategies required in the school study of the native language.

The existing differences are connected, first of all, with the specifics of the object and the subject of educational activity. In the case of teaching children of migrants, the object is Russian as a non-native language and the main subject is all kinds of speech activities (listening, speaking, reading and writing) and knowledge of the culture of the country of the studied language. Russian-speaking students study Russian as a native language, and the subject is the theory about the Russian language, spelling and punctuation rules, and some speech skills. Obviously, with such differences in the subject and object of study, different cognitive strategies are more relevant. The situation is complicated by the fact that for foreign speakers studying at Russian schools, the subject and object of educational activity in the field of Russian as a native language are also important. However, the hierarchy of applied cognitive strategies in the case of non-native language learning will be specific.

The planning phase involves a general prediction: the choice of direction, the activation scenario, the formation of expectations. We believe that children of migrants get these strategies in the native language development and acquisition. These strategies can be attributed to metacognitive because they control the learning process.

Instructional strategies, which the author refers to the second, third and fourth stages, are cognitive. The execution phase includes the perception, identification and fixation. Perception involves repetition, imitation, formal training of sounds and letters, as well as exercises in repetition. The listed strategies are relevant to a foreign language, but for Russian-speaking students, they are shifted to the periphery of the hierarchy of used strategies. For them front-line strategies are strategies of identification: conceptualization, finding supports and resources. At the same time, for Russian-speaking pupils of primary school age the strategies of identification, involving independent search for new information in the textbooks and turning to the teacher for help only in complicated cases are not largely relevant and may be absent altogether. The execution phase applies the fixing. For the foreign students of the considered age group fixing will take place primarily in the oral way, it can also be used for delayed reproduction of the new information, while for Russian-speaking students a written fixing will prevail.

Stage of assessment is mapping of the supports with the scenario. It is carried out primarily by systematization.
students with native Russian language it occurs at an early stage of learning with reference to diagrams and tables in the textbook and manuals and by formulating rules or laws. For the children of migrants this step, of course, is present, but it becomes more relevant later. That is, we can say that a non-Russian-speaking student should accumulate a significant amount of linguistic information, only then he can formulate rules.

Finally, the implementation phase includes strategies such as analogy, construction, communication, creativity. This step is the most important from the point of view of learning non-native language, as the practical application demonstrates the result of learning activities. It is obvious that communication is the most important strategy for children with non-native Russian language, because the ability to communicate in the Russian language is the main criterion of formation of the communicative competence. At the same time, for Russian-speaking students in the center of the practical application will be rather an analogy and construction.

The primary goal in teaching children not speaking Russian is the formation of skills necessary for the implementation of all kinds of speech activities. Respectively the most relevant cognitive strategies will be strategies that are applied for mastering listening, speaking, reading and writing. The cognitive style of students and level of proficiency are of great importance for the prevalence of one or another strategy. If consideration of cognitive style is the condition for the realization of student-centered teaching and can be applied to any subject, the proficiency level is always taken into consideration when teaching a foreign language. From the position of the cognitive approach, we should not only adapt the language material, but also consider the applied cognitive strategies. So, when a student speaks the Russian language poorly, at receptive types of speech activity (listening and reading), first actualized strategies are the strategies associated with the identification of individual linguistic units: phonemes, words, grammatical constructions. The student, who speaks Russian well, primarily will involve the strategy of relying on background knowledge, context, approaching the cognitive activities of Russian-speaking students.

Strategies used in receptive types of speech activity – listening and reading – will also depend on the expected degree of completeness of the perceived understanding of the text. For example, when the aim isto understand the general content, strategies based on context, highlight keywords, recognition of intonation structures will be more relevant. When the aim is detailed understanding of the text, the strategies forevery word recognition, including derivational analysis of the composition, the selection of international items and others, strategies for recognition of grammatical structures will be more important. We emphasize that, as a rule, when learning any kind of language activity different cognitive strategies are involved, we can speak only about the prevalence of certain strategies due to the influence of some factors.

The differences in the hierarchy of cognitive strategies in foreign language and Russian-speaking pupils suggest that the practice of teaching Russian language in a multi-ethnic school should be introduced and trained in different ways. It also seems that perhaps the bilinguals belonging to different ethnic groups can prefer different ways of handling the material.

V. CONCLUSIONS

The cognitive approach to learning a foreign language is an actual course of methodical science, which allows integrating the data of linguistics, psychology and ethnopsycholinguistics. However, the insufficient advance of this course allows us to identify the main problems points and prospects for its advance. This article highlights the problems, the solution of which is of great importance not only for the theory of bilingualism, but also for the practice of teaching a non-native, in particular, Russian language. The main problems in studying cognitive styles and strategies of bilinguals are: a) the complexity of the definition of the concept of “cognitive style” according to its multi-component nature; b) the need to take into account the peculiarities of cognitive styles of bilinguals when considering both perception and speech production; c) undeveloped linguistic classifications of cognitive styles; d) the lack of generally accepted methods for the study of cognitive styles on linguistic material, as well as of ethnocultural features of cognitive styles; e) the lack of knowledge about the hierarchy of cognitive styles in foreign language and Russian-speaking pupils.

The possible solutions for some of these problems are studies of psychological characteristics of the child-related to the process of cognition, and studies of the texts produced by bilinguals, which can provide information about the mental characteristics that affect speech/cognitive analysis of speech errors, modeling conceptual sphere of the speaker and the conceptual structure of the speech, analysis of the structure, semantics, and pragmatics of the text).

New data on the peculiarities of cognitive styles and strategies of bilingual children will have great practical significance, as it will improve the methodology of teaching a non-native language, in particular, within the framework of the current ethnocognitive approach to learning.

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