REVIEW

Analysis of the Linguistic Personality as a Subject of Psycholinguistic Research: Dynamics of Development and Forecasts for the Future

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ABSTRACT

This study explores the psycholinguistic aspects of speech as a cognitive process, integrating linguistic, communicative, and socio-cultural elements. The research addresses the novelty of examining how segmentation, comprehension, storage, and information integration contribute to enhancing communication skills and developing speech abilities. Additionally, it introduces a fresh perspective on psycholinguistic discourse analysis, highlighting the importance of collaboration between disciplines such as psycholinguistics, sociolinguistics, and artificial intelligence. The key findings indicate that linguistic markers (LM) and discourse markers (DM) are crucial in processing speech and interaction. The study also emphasizes the multimodal aspects of communication – written language, gestures, gazes, and postures – as essential factors in speech perception. The results demonstrate that revising the epistemological framework for understanding discourse semantics is necessary for advancing the field. By proposing new approaches, the study lays the groundwork for future interdisciplinary

research and contributes to advancing knowledge of psycholinguistics and communication studies. This study emphasizes the interdisciplinary integration of psycholinguistics and communication studies, focusing on the role of linguistic and discourse markers in cognitive and social interactions. The findings advocate for enhancing educational approaches by integrating psycholinguistic insights to support language development. This research contributes to a deeper understanding of language processing dynamics by addressing challenges in multimodal communication and cognitive load management. It paves the way for innovative applications in artificial intelligence and sociolinguistics.

Keywords: Speech Analysis; Cognitive Process; Linguistic Aspects; Communication; Dialogue; Information Segmentation; Integration

1. Introduction

1.1. Introduce the Problem

The term "psycholinguistics" was coined in 1964[1]. The first theories of psycholinguistics included an overview of the theory and research problems that have a wide range of coverage[2]. The discipline presents models of communication processes and related disciplines and distinguishes three approaches to language behaviour: the linguistic approach, learning theory, and information theory[3]. The further development of psycholinguistics has led to the study of various aspects related to cognitive psychology, linguistics, and psycholinguistics, which in turn identifies four main promising areas:

   I. Synchronous psycholinguistics (the study of adult speech behaviour) at the microstructural level;

  II. Synchronous psycholinguistics at the macrostructural level (the study of motivation states and ambitious sections when behaviourism still dominated linguistics and psychology);

 III. Consistent psycholinguistics related to the creation and perception of language messages;

  IV. Diachronic psycholinguistics (called so because it applies to temporal development), which deals with the acquisition of language 1, language 2, and bilingualism, as well as a language change.

Predicting the future development of a linguistic personality is another important component of the problem of psycholinguistics. Given the rapid technological development and changes in society, we can expect that the language personality will also undergo changes[4]. For example, the increasing use of computer language and electronic communication may affect people's speech style and vocabulary.

Understanding future trends in the development of language personality will allow us to adapt language teaching and communication methods to modern requirements.

Thus, the study of the problem of linguistic personality as an object of psycholinguistic analysis is of great importance in understanding the individuality of a person through the prism of their language. The dynamics of development and forecasts of the future help to reveal the changes taking place in the linguistic personality, as well as to adapt teaching and communication methods to current and future requirements.

1.2. Explore Importance of the Problem

Linguistic personality is a concept that refers to the uniqueness and individuality of each person in their language use. It covers such aspects as language ability, speech style, vocabulary, phonetics, syntax, etc.[5–7]. The study of linguistic personality within the framework of psycholinguistic analysis allows us to reveal the psychological characteristics of a person through the prism of their language.

The dynamics of language personality development is an important aspect in the study of this problem. It includes periods of active language learning in childhood, the development of language skills during adolescence and adulthood, as well as possible changes and modifications in speech at different stages of a person's life[8]. Understanding the dynamics of the development of a linguistic personality allows us to better understand the influence of various factors on the formation of language and speech. In the context of the issues of this paper, oral speech production is a relevant object of study. The production of spoken language differs significantly from the production of written language if we limit ourselves to the traditional forms of both language modalities, except dig-

ital forms that blur this line. This demarcation line is defined through the linearity of the speech chain, where speech is performed in real-time, while written communication allows us to return to the text we have read[9]. Spoken language has limited navigation, which affects speech segmentation and information perception, aligning with cognitive abilities such as working memory and processing speed[10]. In this context, linguistic inquiry and word count (further LIWC) are promising tools used in speech segmentation to analyze and categorize the linguistic content of spoken language. For further analysis, speech segmentation refers to dividing continuous spoken language into smaller units, such as words or phrases. LIWC is a text analysis tool originally developed to analyze written text. However, it can also be applied to speech data by transcribing the spoken words into written form and then applying the LIWC analysis[11].

Thus, the study of psycholinguistic processes of oral speech in the context of sequential psycholinguistics is an important step for the science of linguistics in general.

1.3. Describe Relevant Scholarship

The study of linguistic personality has emerged as a central focus in modern psycholinguistic research, particularly in understanding the interaction between language, cognition, and identity. Since the latter half of the twentieth century, linguists have explored the role of the human factor in language, which introduced new perspectives on language and thought, national language, worldview, and the concept of linguistic personality. Language, as an active tool for perceiving reality, serves as a mirror of the world that individuals seek to comprehend[12]. This led to the rise of linguistic personality studies, which are now integral to the investigation of worldview construction.

Contemporary studies in communicative linguistics highlight that language is not just a vehicle for thought but also a means of verbalizing human interaction in collaborative activities[13]. The linguistic personality becomes a key concept in these interactions, as it encompasses how individuals express their identities and values through language. The study of linguistic personality, therefore, offers insights into human nature, including mentality, values, and worldview formation through natural language.

The emergence of the linguistic personality as a research object aligns with the anthropocentric paradigm, which posits that humans perceive the world through consciousness and structure their experiences and values through speech. Central to this concept is the native speaker – the linguistic personality – whose speech reveals cognitive and cultural patterns[14]. Textual data analysis enables researchers to derive valuable insights and detect patterns from extensive amounts of written or verbal language data, enhancing comprehension of human behaviour[15].

In psycholinguistics, spoken language serves as the key point of convergence between linguistics and psychology. Speech segmentation, comprehension, and the use of linguistic markers (LM), including discourse markers (DM), are essential to understanding linguistic personality. Multimodal markers, such as acoustic, prosodic, or specific linguistic expressions, shape communication in both written and spoken contexts. These markers play a vital role in the way language is processed, both cognitively and socially, and contribute to the broader understanding of how language reflects and shapes individual and collective identity[16].

Future research in this area could focus on the intersection of language, cognition, and social interaction, expanding the understanding of linguistic personality in diverse communicative settings.

1.4. State Hypotheses and Their Correspondence to Research Design

As a hypothesis, we take as a basis the idea that discourse markers perform the function of segmentation in speech and provide an intersubjective dimension of language, especially in real-life interactions. In such cases, their functions can be different, including maintaining conversation, stimulating conversation, completing a sequence, expressing surprise, and expressing (dis)agreement. These functions are more metadiscursive than discursive, as they contribute to the structuring of language rather than the representation of content. The second hypothesis is to associate these markers not with speech, but with the linearity of a speech chain that is different from written dialogue. This means that the emphasis is on the level of interaction. In fact, monologues are often structured as fictional dialogues, especially in the oral modality. Therefore, we put forward a contrast between oral and written speech, rather than between monologue and dialogue, which reflects the modality of discourse rather than its form.

Whether discourse markers (DMs) are used to organise interaction or to structure information, they indicate the speaker's subconscious activity aimed at understanding the interlocutor. DMs prompt reflection on how the speaker presents his or her discourse and how the interaction takes place. Although DMs are a linguistic category and are rarely discussed in the psychology of language, they are important for the study of language in terms of the cognitive processes underlying language use. Many researchers in the psychology of language focus on dialogue collaboration and the measurement of dialogue success. Linguistic markers (LM), including DMs, play a role in navigating dialogue and contribute to its success. Therefore, the study of the DM category is important for understanding psycholinguistic interaction.

2. Method

The present work is based on the observational method and aims to conduct scientific analysis and characterisation of metadiscursive units specific to oral speech from the perspective of linguistic speech activity (further LSA), consistent with the psycholinguistic approach. To this end, the following questions are put forward: Do discourse markers affect the speaker's cognitive processes in oral speech? Are discourse markers indicators that reflect the interaction between interlocutors? If so, is it possible to distinguish between the cognitive and sociolinguistic sides of speech? Do specific features of discourse markers interact with simultaneous audiovisual communication? These questions interest linguistics, which seeks to study DMs and their role in metadiscourse semantics, as well as psycholinguistics, which investigates them as key elements in information processing. Therefore, this study uses a mixed methodology to investigate this question.

2.1. Identify Subsections

A psycholinguistic experiment was conducted to manipulate the cognitive load that complicates interaction. The hypothesis that when the interaction becomes more complex, markers appear that facilitate processing was put forward by observing and recording the use of the word "so" in oral situational modelling. The experiment was used to create a corpus of spontaneous interactions that were subjected to qualitative linguistic and interactive analysis.

2.2. Participant (Subject) Characteristics

The paper focuses on the compatibility between psycholinguistics and linguistics and their common theoretical assumptions based on the notion of common ground. We investigate the differences between dialogue and interaction using the specific marker "yes" during a practical English class. The corpus was collected as part of a psycholinguistic experiment on cognitive load, which involved pairs of participants (6 pairs) who were offered the game Tangram. In this game, it was necessary to assemble pieces of wood (square, triangle, etc.) in such a way that they formed different shapes, but all instructions were provided exclusively in English. The pairs of students for the experiment were first-year students of non-linguistic faculties with A2 English language proficiency. In the experiment, the teacher acted as a director and had to create the pairs for the game.

2.3. Sampling Procedures

The experimental framework, the type of data collected, and the way it was processed allowed us to formulate the above hypotheses. In the experimental game, the director had to tell the performer which figure to place and where to place it so that the performer could reproduce the image. Thus, the interaction between the director and the performer was asymmetrical, as the director had information that the performer did not. The director had epistemic power according to the principle of responsibility, as he had to guide the interaction. Participants interacted using their phones to avoid the potential influence of non-linguistic markers such as glances or smiles. Each pair performed a cognitive load task with a time limit. In the cognitive load game, the experimenter indicated the time limit (10 minutes) and regularly reminded them of the remaining time every two minutes.

2.3.1. Sample Size

The resulting interactions were transcribed according to the rules of shorthand, and all the cues and hesitations shown by the respondents were recorded during the experiment. The transcripts were compared. Entering the scripts into the database made it possible to systematise the records and calculate holistic project markers such as okay, yeah, and the marker so was used especially often.

2.3.2. Measures and Covariates

In the transcripts, from the explanations of the game to the completion and joint validation, it is clear that the director's cues encourage the performer to confirm their perception of the subproject. The director's remarks contained a lot of information in English and engaged the performer by using the marker "you see", which means "do you see (understand)". The performer's response confirmed his perception and indicated a common ground with the director, confirming their communicative integrity. This is confirmed by common elements such as spatial data and reminders of the unity of their approach to the task (placement of the figures).

2.3.3. Research Design

Scripts allowed us to emphasise the differences between the cognitive processes under investigation, as their results determine what can be done or what can be prevented. Language interaction approaches, on the other hand, focus on the interaction itself, paying attention to the participants' knowledge and understanding.

2.3.4. Experimental Manipulations or Interventions

Linguistics is situated between two approaches - interaction and cognition - which is not an easy task from the point of view of psycholinguistics. The notion of discourse is one of the first attempts to integrate psycholinguistics into a pragmatic approach, particularly in the context of oral speech. To study this phenomenon, the study used a psycholinguistic model that reproduces the phenomena of speech and thought activity in a simpler form in order to simplify their study in theoretical and experimental aspects [17]. It allowed us to identify dyadic scripts and interaction asymmetry and develop the distribution of DMs.

3. Results

In this paper, the term dialogue and the analysis of spoken language in the context of the psychology of language are used to describe the interaction between linguistics and other sciences. Dialogue is defined as a typical configuration where two speakers exchange information and follow verbal rules. Spoken language analysis studies social activities that are governed by micro-rules such as interruption, resumption, correction, silence, and interlocutor selection. This study aims to explore the ways in which interlocutors perform these activities and shape the conversation.

3.1. Measures and Covariates

The psychology of language is an interdisciplinary field that combines scientific research and knowledge from psychology, cognitive science, and various subfields of linguistics, including phonetics, semantics, syntax, and pragmatics. This allows us to investigate the cognitive processes that ensure effective communication. For example, studies of the interaction between subjects in a dialogue can reveal the principles of success or failure in communication, in which the dialogue between two people is aimed at achieving a common goal. Psychology also studies cognitive indicators - reactions that reflect cognitive processes, not just social aspects. Through experimentation, in which various parameters are controlled, we can investigate the underlying processes of communication.

3.2. Research Design

The study of cognitive processes often involves focusing on the outcomes of these processes, i.e., on what they enable or inhibit. Conversely, language interaction approaches focus on the course of interaction, taking into account what participants may know at the time of communication.

Linguistics straddles the boundary between two approaches - interaction and cognition [18]. The notion of discourse is one of the first attempts to integrate psycholinguistics in a pragmatic approach [19]. Before presenting our linguistic model, inherited from the notion of discourse, we would like to introduce the model [17] that serves as the experimental basis for our study.

This scientific model is the result of a merger of linguistic and psycholinguistic concepts. Using psychology, the author adopted the idea of dialogue as a purposeful activity, and from linguistics, the concept of joint activity. This model considers dialogue not only as coordination between partners but also as coordination between two agendas, activating our cognitive resources and social skills. This makes it possible to carry out simple communication and joint activities such as organising a party or cooking dinner. Dialogues can be divided into two activity areas, where one is responsible for

joint action and the other for managing the dialogue itself. They are not independent, as problems that arise in dialogue can arise from joint action and vice versa. The author also notes that dialogue is created to manage joint action. The main joint activity plays the main role, and the dialogue is created to manage it. The author also uses the concept of "design features" to describe the navigation and management of the dialogue and distinguishes them into sections, subprojects, and plans of the participants in the joint activity.

3.2.1. Recruitment

Collaborative activities focus on communication, which is purposeful and dependent on the success of the dialogue. Project markers define sub-projects that help navigate the sequence of interactions in an interactive context. These markers, also known as backchannels, continuators, confirmation markers, and evaluations, act as coordinators of the interpretation of the sequence between partners. They are discourse markers specifically used for transitions between projects or sub-projects.

3.2.2. Statistics and Data Analysis

For Suzuki[20], who would support a restrictive conception of psycholinguistics, tokens can be seen as the core of the cognitive psychology of language. For others, these terms are clearly equivalent[21]. Discourse markers are divided into oral and written, with oral including dialogue markers and monologue markers, and written being divided into marking elements and other categories.

3.2.3. Ancillary Analyses

Finally, it should be noted that although the problem of functional categorisation of markers is a common one, the problem of their linguistic categorisation is of concern only to linguists: for example, the question of whether we can treat the same way a non-word (hum, uhuh), a word with different grammatical status (okay, so, yes, evident) and small sentences like I think, I mean, you see?

3.2.4. Participant Flow

Our linguistic model is based on the concept of semantic dynamic construction of meaning in spoken utterances[22]. According to this model, the meaning of an utterance is formed during the active perception of language units when lexical and grammatical information is processed. This construction of meaning takes place during the perception (cognitive processing) of the utterance.

Based on the perceived language units, lexical and grammatical information is collected and transformed into a sequence of altered representations that reflect the dynamics of meaning. This process of meaning construction is based on the interaction between language units and context. On the one hand, each linguistic unit interacts with its context and its meaning depends on the meanings of other units with which it cooperates. On the other hand, the overall meaning of an utterance retroactively influences the meanings of individual units - as the "whole" interacts with the "parts". This principle of evoking and convening meaning makes the model both compositional and gestalt.

It is important to note that this model has correspondence with some models developed in psycholinguistics, such as the dynamic and incremental semantic processing proposed by[23]. In addition, the model considers intersubjective adjustment in speech to reach a common point of agreement, as discussed in[24]. Perceptions of the conversation and of the dialogue partner are effectively exchanged and adjusted in the process of dialogue and joint utterance construction. The dynamic meaning construction model plays an important role in these mechanisms.

3.3. Participant Flow

Sanakuiev[25] analyses the so marker within the framework of linguistics, and it should be added that the marker has been studied very little in psycholinguistics. Based on the current state of the art, the study classified the use of this term according to three criteria: syntactic status, its functions at the verbal stage, and semantic meaning. The same study, based on a mixed corpus (spoken/written), concluded that there is a clear differentiation of its use according to the linguistic modality. A diachronic view of the term sheds light on its specialisation in spoken language. Although, Konovalenko et al.[26] treat the marker as both written and spoken. According to Sanakuiev[25], the so marker is primarily used to encode the "morphology of dialogue". Samuel[27] confirms the pragmatisation of the term. Thus, the term covers the entire spectrum of intersubjectivity markers from a simple present, which is highly integrated syntactically, to a fully autonomous particle whose function is highly interactive. A similar study shows that LIWC can be useful for analyzing spoken language in speech segmentation, providing insights

into the linguistic content and facilitating further analysis of the segmented speech data. In the context of speech segmentation, LIWC can be used to automatically identify and categorize different aspects of the spoken language. By transcribing the speech into text and applying the LIWC analysis, researchers can gain insights into the speech's emotional, cognitive, or social content[28]. All the tools mentioned above can identify patterns, trends, or differences across different speakers or segments of the speech.

3.4. Intervention or Manipulation of Fidelity

In the imperative semantics, the word "so" plays two complementary roles in creating a verbal situation. The first role is to define the contours and boundaries of the verbal situation, and the second role is to introduce new elements to the situation. The introductory function plays a central role in delimiting and structuring the verbal situation. The semantic instruction for "so" is to evoke scattered elements (entities or processes) present in the discourse and/or extra-linguistic context and make them cognitively and interactional relevant. Scattered elements can include different situations, for example, grouping information presented in the rest of the discourse. The different types of situational use of 'yes' depend on the context and the relationship that 'yes' has with other linguistic units and their indications. Types of "so" can take different forms, for example, by introducing new elements into a scene and integrating them into a shared representation. "So" can also bring together disparate elements to integrate them into a common representation. "So" seems to be a semantic instruction that has significant relations to dialogue and verbal interaction in general. Interaction is indeed a cognitive activity, as it requires information to be stored in memory, inferences to be made, and anaphora construction to be done. In the process of dialogue, speakers can adjust their discourse to the speech of others by grouping information in a way that makes it comprehensible to the speaker. "So" is used to integrate information into the verbal scene and make it perceptible to other participants. This helps to streamline the interaction and create "good forms". The two main roles of "so" can be described as introduction and conclusion, changing separated information into grouped information. If this instruction is correct, it should facilitate the processing of information in the dialogue. It should appear when the need arises, for example, when the

cognitive load increases. The concept of cognitive load is defined as an indicator of the intensity of cognitive processing of information. In French, the use of oral signs and spoken language by an individual to perform a task in a particular environment has been studied[29]. The paper formulates the dual hypothesis that the use of "so" in facilitating interaction appears primarily in the context of difficulty (when speakers experience a high cognitive load). To test these hypotheses, the following data were collected and analysed.

3.5. Baseline Data

As part of a psycholinguistic experiment on cognitive load, a corpus of DM use was collected during a game-based English class, which was conducted exclusively in English for A2 students. The experiment involved pairs of participants who were offered the game Tangram. The results showed that the interaction between the director and the performer was asymmetrical, as the director had information that the performer did not. The director had epistemic power according to the principle of responsibility, as he had to lead the interaction.

3.5.1. Statistics and Data Analysis

The resulting interactions were transcribed, and all the cues and hesitations shown by the respondents were recorded. The participants in the experiment frequently used coherent "project markers" such as okay, yeah, and "so" was used especially often. Here is a representative example of an interaction in the workload corpus: (see text for details).

1 Dir: So, now you have to take your little triangle
2 Exec: yeah
3 Dir: your little triangle and you put the right angle at the top left you
you see the continuity of the small square on the right-hand side of the small square
5 Run: OK, so that closes the hull.
6 Dir: This is the back of the boat.

In this short example, the director's remarks are very informative on a subconscious level, he calls on his interlocutors to confirm his interlocutor's actions by using "yes". The perception verb to see is clearly aimed at the representation.

Does he see the figure in the same way?

The performer's response contains several CBMs: the ok takes note of the information, the full validity of which it

effectively suspends, and thus announces the reformulation proposed by the speaker, who gives a different representation of the scene that follows the director's description. Their agreement indicates that they share a common ground, a body of knowledge that they are aware that they can share consciously. It confirms this alignment and points to the previous elements in two ways: it evokes spatial information and reminds them of their unity (and in this case, their complementarity) in relation to the task at hand (placing the small triangle) while understanding the teacher's instructions in English.

In addition, the performer's response may differ from the situation described, which indicates the presence of more complex factors that affect perception and understanding.

In the director's remarks, you may notice the use of the pronoun "your" in relation to the interviewee. This indicates a close relationship between the director and the interviewee, perhaps they share the same role or have a similar point of view.

Also, the use of the verb of perception "to see" emphasises the activity and awareness of the interlocutor as a person who perceives and understands the situation.

In general, these aspects add a subconscious character to the line, allowing us to understand the process of perception and communication between the director and the interlocutor on a deeper level.

3.5.2. Adverse Events

The results of the experiment revealed 186 DMs that contained at least one "yes" in the scripts and 18 dyads (which were mostly created by directors, i.e., 159 compared to 27 created by performers).

The interaction asymmetry seems to have a real impact on the distribution of DMs. In addition, as expected, turns containing at least one "yes" were more frequent in the "with load" condition (123) than in the "without load" condition (63). The same pattern was observed among the directors (108 "with load" and 51 "without load"), as well as among the cameramen (123 "with load" and 63 "without load").

The same pattern can be observed among managers (108 "with workload" and 51 "without workload") and among executives (108 "with workload" and 51 "without workload"), but to a lesser extent (**Table 1**).

So, cognitive processing limitations mean that our brains cannot process large amounts of information at once.

This means that when we listen to speech, we cannot understand all aspects of it at once. To facilitate this process, speech is divided into segments, or chunks, that we can process separately. These segments correspond to linguistic structures, such as sentences, phrases, and words, which are the basic units of language.

Table 1. Frequencies in relation to the total number of markers used in each condition.

	Directors	**Performers**
With load (1026 markers)	0.11	0.01
No load (871 markers)	0.06	0.01

4. Discussion

The hypothesis of the paper is partially confirmed by the joint increase in cognitive load and the number of participants' oral reports. However, this conclusion should be taken with some reservations, as the results of the experiment show that students perceive tasks without workload to be less difficult than those with workload. This may indicate that the mental load is related to the management of interaction rather than the task itself. The results also indicate that the director considers themselves to be the bearers of epistemic authority in communication. In general, interaction is an ongoing process aimed at eliminating misunderstandings and reaching a common point of contact. Confirmation by the director and the performer of the correspondence between their statements and the resulting figures is an important stage of interaction. For example, if a new misunderstanding arises, the director does not ignore its resolution, regardless of the performer's suggestions.

Dir: You take the two sides that go towards the right angle and you

so that they both have a horizontal face so that both sides are

both sides are horizontal and the other vertical

Exec: That makes a square, I don't see what you're getting at at all

wait, so you tell me, I'll take the two triangles

Dir: Just glue them together

Exec: All right, sideways, and pointing downwards.

Dir: There you go

Exec: Ok

Dir: So and the two long sides are diagonal

Exec: Yeah.

Dir: That's right

Exec: Yeah.

Dir: So on top of this big triangle we're going to build a square

Exec: Yeah.

Dir: Which is going to be turned a little so that you have your points at the top

bottom left and right, you know what I mean?

Exec: Not at all, but it doesn't matter

Dir: You take a square and turn it 15 degrees, you see?

Exec: Right

Dir: Right, so it will touch the middle of the triangle

Exec: Right

Dir: There you go

Exec: It works

Dir: And so to construct this square...

As a result, it may indicate that the director believes that the performer has achieved the goal following his or her instructions. This indicates a convergence of ideas about a common ground and promotes interaction. That is why the use of "so" is associated with cases of discourse completion or beginning, according to Beibei[30]. However, if "so" occurs in situations where cross-understanding is impaired, it can be predicted that it also appears immediately before or after sequences during which speakers find it more difficult to communicate. In such cases, partners may use more markers to avoid misunderstandings. In other words, the greater the risk of misunderstanding, the more likely speakers are to create discourse markers to structure the interaction, reducing processing costs (hence the asymmetry of the data in the loaded condition) by making them intersubjective positioning.

This hypothesis, which has been partially tested and, above all, supplemented, raises new scientific questions. The new questions that arise include:

- Is each speaker able to correctly assess the cognitive load experienced by their partner?
- How do speakers account for potential inequalities in cognitive load when they use linguistic markers such as "so"?

In analysing these issues, we have previously assumed that the director can assess the cognitive load experienced by the performer and adjust the utterances accordingly. How-ever, it is worth noting that no research has directly examined this ability.

It is also worth investigating whether interlocutors take into account potential differences in cognitive load arising from the use of markers such as "yes". These questions will be the subject of future research.

The concept of a (sub)project is pragmatic, as it actually correlates with different stages of the game: tangram detail = sub-project.

In the perspective of the presented work, Grüter[31], in a similar study, asks what happens in everyday, informal, spontaneous interactions that are not (conversations in cafes, family evenings, etc.). What about conversations limited to a specific interactive genre (TV interviews, ordering food in a restaurant, and other frames)? This question is especially important in the context of psycholinguistics, where dialogue is defined as purposeful. This directly limits the types of situations (solving a puzzle, determining a route, etc.). The question of whether the results can be generalised to more informal situations remains open. An interactive approach seems to be able to overcome the limitations imposed by the corpus by freeing us from the notion of a project and adopting the notion of cognitive action[32]. In this context, the following turn of phrase indicates that the speaker has understood the meaning of the turn of phrase.

Bowler et al.[33] state that one of the promising directions in the study of linguistic personality is LIWC (Linguistic Inquiry and Word Count), a computer program that analyses text and determines the frequency of different words and linguistic categories, such as positive or negative emotionality, analytical or emotional style of speech, social orientations, etc. The application of LIWC in the study of linguistic personality can be very broad. For example, it can be used to analyze social networks, a person's psychological state, study emotional and psychological resilience, communication research, and the influence of speech on the masses. LIWC can help identify various linguistic peculiarities associated with different psychological states or personality traits and help answer questions about the relationship between linguistic style and personal characteristics.

Gravelin et al.[34] examine the use of discourse markers according to the director's retrospective interpretation, where the previous phrase is interpreted as a request for confirmation. This approach, which does not consider the cognitive

component of speech, allows us to link the sequence of interaction and the distribution of the two aspects that regulate the use of "yes". Rabab'ah et al.[35] propose to characterise the use of "so", which has not been systematically studied in the context of a comprehensive analysis. This analytical approach demonstrates that "so" functions as a closure element, revealing the action it closes. Focusing on the use of this expression, Kupske & Perozzo[36] identify several types of closure (completion, re-completion), depending on the context. Pittman-Polletta & Dilley[37] identify the peculiarities of oral communication and representation of oral speech in English, as well as the degree of asymmetry present in the interaction. They find a higher frequency of the use of "so" in asymmetric institutional interactions, which confirms our analysis in terms of common ground and epistemic authority.

Lukačević[38] analyses the uses of "so" in competitive or polemical contexts, some of which allow the speaker of the dialogue to gain an advantage in a polemical context.

In this context, the question arises as to why "so" performs this role and not another linguistic means. We believe that the semantic instruction we have proposed allows us to explain the transformation of a linguistic unit into a psycholinguistic discourse marker and confirms our grouping hypothesis. Bo & Qiongpeng[39] describe discourse markers as a speech act in which the speaker combines several actions. Their interactional approach defines DMs as a highly organising element, while our approach attributes a role to information structuring. Aliyeva[40] emphasizes that the digitalization of education significantly affects the formation of a linguistic personality, mainly through integrating modern norms, standardization of education, and introducing new technologies that transform teaching and knowledge-sharing methods. This is a central point of discussion, given that our cognitive approach includes psycholinguistic and interaction aspects as factors that influence the understanding and perception of information. The integration of these two perspectives is the focus of the study.

5. Limitations of the Study

In the present study, we deliberately manipulate individual workload to determine its effect on the production of markers such as "yes". This raises the question of whether the use of such markers can reallocate cognitive resources to manage tasks such as dialogue navigation or spatial placement. We plan to conduct further research to answer this question. In addition, it should be noted that there are moments when the interaction itself does not necessarily lead to an increased cognitive load. These questions point to the limits of our study and opportunities for further research. In addition to the above issues, there is another aspect that needs to be elaborated on. This aspect is the artificiality of the corpus. The conditions of the experiment are quite narrow, and rather a type of highly structured linguistic interaction. Task-based dialogues cannot be representative of language use in general.

6. Conclusions

The paper describes the research perspectives of psycholinguistic analysis of the use of discourse markers at the level of oral speech. We believe that the dynamics of psycholinguistics development are predictive for the future of the science of linguistics. The main directions of the presented research are related to the analysis of speech as a cognitive process that includes temporal and informational integration. Particular attention was paid to the segmentation of speech, as well as its understanding, storage, and integration of information. In the context of this study, two approaches are distinguished: one aimed at studying the content, representation, and common ground of speech, and the other at studying the structure of interaction. Collaboration with psycholinguistics and the concept of dialogue is key to the critique and development of the project concept. The study of interaction and discourse semantics in the sociolinguistic context deserves attention, and the epistemological framework for defining the concept of discourse markers needs to be revised. Future research should take into account the multimodal aspect of oral communication, including gestures, gazes, and postures.

Author Contributions

Conceptualization, S.R. and O.K.; methodology, S.R.; software, M.B.; validation, S.R., O.K., and A.V.; formal analysis, O.K.; investigation, M.B.; data curation, A.V.; writing—original draft preparation, S.R.; writing—review and editing, T.N.; visualization, A.V.; supervision, S.R.; project administration, S.R.; funding acquisition, O.K. All

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