

The Complexity and Multifacetedness of Conversation

*Karol Striżyk, Piotr Kruk, Justyna Ziótkowska, Bartłomiej Skowron and
Magdalena Witkowicz*

Abstract

Conversation, as an integral part of our everyday life, is a subject of research in various fields. In this paper we aim to look at the different layers of conversation through multidisciplinary lenses. First, by describing two distinct speech disorders resulting from brain damage, we highlight the connection between brain functioning and communication. Language usage can be profoundly disrupted when particular brain areas are affected. Second, shifting to a sociopsychological perspective, we look into potential reasons behind common misunderstandings. Conversations are shaped by social scripts, impacting communication patterns and intercultural dialogues. Then we delve into the logic of conversation, focusing on the mechanism of presupposition. Through the analysis of simple interactions, we unveil the subtle nuances of conversation and the role presupposition may play in manipulation. Finally, we explore the transformative potential of dialogue in psychotherapy. Conversations serve as powerful tools for treatment, transcending specific techniques. They can have a profound impact on brain functioning and well-being. Our exploration underscores the multifaceted nature of conversation and the complex effects of this seemingly simple process.

Keywords

conversation – speech disorders – logic of conversation – conditions of conversation

1 Introduction

Conversation is an ineliminable element of our everyday lives. We talk at home, at work, at school, in the street, about trivial and important matters, sometimes in private, sometimes on business. For most of us, it is as natural an activity as breathing – we engage in it without giving it any thought. So

why is it that philosophers, logicians, psychologists, cognitive scientists, linguists, brain scientists, biologists and other scientists have studied (and continue to study!) conversation? How is it that this element of our everyday life can be disturbed in various ways under different conditions? Why has there been such an intensive development of psychotherapy, the essence of which is conversation? What can logicians add to our knowledge about conversation?

In this short article we will try to show that, despite its apparent simplicity, conversation is a complex process, conditioned not only by normal brain functioning but also by logical and socio-cultural rules. To this end, we will draw on work in psychology, but will also look into other fields that deal with this phenomenon. We will start with brain disorders affecting the mechanisms of speech, then move on to social, cultural and logical aspects of verbal communication, before ending by making reference to clinical psychology and psychotherapy.

2 Biological Bases of Speech Disorders

The development of knowledge about the brain is largely a history of diseases, tragic accidents and sometimes physicians' mistakes. The neurological mechanisms of speech production and comprehension are no different. We will briefly describe two typical examples of disorders resulting from brain damage, in which the ability to use language is disrupted in various manners.

More than 150 years ago, Paul Broca, a French surgeon, met a man in the hospital who was referred to as Tan (Dronkers et al., 2007). His real name was Leborgne and his nickname came from the fact that, although with different modulations, "tan" was the only word he spoke. However, he seemed to understand what was being said to him. After Tan's death, Broca performed an autopsy and found extensive damage to the posterior part of the left inferior frontal gyrus. Within a short time, similar lesions were seen in around a dozen more patients. The affected area of the brain now bears the surgeon's name, and the disorder resulting from the damage is called Broca's aphasia. Today, it is recognised that this type of aphasia is associated with speech difficulties, while speech comprehension remains almost intact (Dingwall, 2005). This has significant implications for conversation:

"I: now tell me what this thing was with your legs last week or week before.
(2 sec.)

R: a: no good a: (4 sec.) [sighs] a: (1 sec.) ache (2 sec.) and (5 sec.) a: (4 sec.) a:
(8 sec.) a: (2 sec.) knees (1 sec.) and ankles (3 sec.) a: (5 sec.)

I: what did you do about it (4 sec.).

R: a: home (3 sec.) doctor (2 sec.) and (1 sec.) legs (1 sec.) m: a (4 sec.) a: (2 sec.) walking (2 sec.) no good.

I: no good huh?¹

The above extract is an excerpt from a conversation with a man suffering from this disorder.² It illustrates the speech disturbances commonly occurring when Broca's area is damaged – lack of fluency of speech, difficulties with grammatical sentence construction and a limited vocabulary.

Although the above extract can be considered a typical example of expressive aphasia, in reality, the severity of the disorder can vary greatly from person to person: from a complete loss of the ability to speak (as in Leborgne's case), through levels similar to the one demonstrated above, to relatively minor problems with finding the right word.

At the time of Paul Broca's work, neurologist Carl Wernicke was studying the area where the auditory nerve and the auditory cortex meet (Dingwall, 2005). He found that damage to this area also affects speech, although in a very different way than in Broca's aphasia (and again, both the disorder and the brain area were named after the discoverer). In the case of Wernicke's aphasia, impaired language comprehension is considered its main characteristic. People suffering from this disorder do not necessarily lose fluency of speech, its syntax may also be preserved. However, in their utterances, they increasingly deviate from the topic or answer a completely different question than the one asked. In a variant of this disorder, so many twisted and non-existent words (neologisms) are used in speech that its content becomes completely unintelligible. Interestingly, people suffering from Wernicke's aphasia may not realise that there is something strange about the things they are saying. This phenomenon – lack of awareness of one's disease – is nowadays called anosognosia.

The consequences of various types of lesions (brain damage) are the most striking examples of how complex and unstable our ability to communicate verbally is. However, they are relatively rare, hence we do not experience problems related to them on a daily basis. Much more frequently and subtly we are affected by the consequences of the psychological processes of social cognition during communication.

3 Socio-Cultural Conditions of Conversations

Most of us are able to describe the steps needed to start and drive a car. On a similar basis, we can describe the schematic course of a chess game or a field

hockey match. According to some social psychologists, we are able to create similar descriptions for typical social situations. Such schemas in psychology are called scripts and are defined as mental representations of events and actions or sequences of them (Schank & Abelson, 1977). They are formed on the basis of acquired knowledge and experience related to a given type of situation. It follows that although there is a certain script of a certain situation that is more or less consistent for a particular society, the script of the same situation may vary for two different people. For example, a person only familiar with the formal rules of hockey will most likely be surprised to see a “mash pit” of players punching each other on the ice. On the other hand, to a person who has had the opportunity to watch hockey matches, a “mash pit” will not seem unusual. The latter one knows that in the social sphere, there is some consent to players’ fights, as they potentially belong to the script of a hockey match.

Importantly, the overwhelming majority of our interactions with other people are not excluded from the scripted categories. “A visit to the office,” “shopping at a discount grocery store,” “a police check,” “meeting a buddy.” Each of these scripts allows us to engage in these types of situations without having to devote as many cognitive resources to them each time, both during the planning and the course of the events. Also, in the case of formal contacts, the scripts make them more efficient and less stressful; we then use a limited repertoire of possible questions and answers. As long as the conversation follows a script, much of the action and reaction is semi-automatic. We are aware of what we are doing, but we do not think carefully about every single word. It is worth mentioning that information processing is then shallower, hence, according to researchers, some of the methods of social manipulation are based on activating scripts.

A good example of intuitive awareness and the usage of scripts is a method that appeared some time ago among some of the individuals asking for change on the streets of Wrocław. The method involves starting a conversation by saying “I’ll be honest. I’m collecting change for beer.” Someone has rightly pointed out that people have become accustomed to and have automated their (usually negative) responses to requests containing made-up stories about both the motivation and the situation of the asker. The asker’s unexpected sincerity brings the element of novelty necessary to jolt the bothered out of their automatism and at least increase the chance of having a real (sic!) conversation. That is, of course, until the asked notice a pattern, learn it and master their response as part of the “sincere beggar” script. Interestingly, this method can also derive from automatisms, according to which “honesty” is a positive trait to be appreciated and rewarded with help. And all this in a few words!

As a consequence of hypothetical scripts, a number of problematic areas occur, where communication may not go our way. First, we may be participating

in a situation for the first time and we lack adequate knowledge of it. The notorious “visiting the future in-laws” definitely falls into this category. What should be said, what can they ask about and how not to look like a fool? Subsequent visits usually fall into the category of less stressful ones, as we (at least partially) know what to expect and we gain some kind of scheme – a script. It is also possible that our script of the situation we are in is not adequate for it for some reason. This problem usually occurs when we tend to overgeneralise and apply our knowledge of previous events to others, without taking the changing circumstances into account, in particular – people and their impact on the course of events. This leads to the third and, in our opinion, the most interesting of all the potential issues. Sometimes, when two people who interact with each other perceive the situation they are in differently, they may execute entirely different scripts. This is often the case when one of the dialogue participants “puts on an act” in the relationship by hiding their real intentions. It will also happen when individuals misread each other’s intentions. This often results in an abrupt breakdown when our “almost-spouse” turns out to have only collegial feelings for us, and the “grandson” turns out to be a money extortionist.

Incompatibility of scripts and conventions of conversation can also happen when people from two different cultures meet. The easiest way to show the differences is to compare the extreme cases. Beyond doubt, Iran and Germany are separated by an enormous distance – both geographically and culturally. Certain consequences of this distance are shown in a study that analysed the beginning of telephone conversations (Taleghani-Nikazm, 2002). Thus, Iranians, once they identify their interlocutor, move on to a series of questions about their well-being and health. As in the United States (for example), the response is a quick and brief “okay” (or, rather, the Persian equivalent), and then the “how are you” is reciprocated. However, this is not the end of the exchange of pleasantries. In a similar manner, inquiries about spouses, children or, in general, members of the immediate family are made – even in situations where the phone is not answered by the person we were trying to reach. Germans rarely engage in this ritual exchange of “how are you/how is your family.” Once the participants recognise each other, they usually move on to the reason for the call. If the well-being questions are asked, they elaborate on them instead of moving on after a brief ‘okay’ or ‘fine.’ The questions about family do not come up either. The study is interesting as it not only juxtaposed two cultures and showed the differences between them, but also analysed conversations between the representatives of the two nations. Thus, Iranians, who have lived in Germany for many years and are fluent in the German language, when starting conversations automatically impose a pattern of questions

about well-being and family, implemented from their culture. In one of the recorded excerpts, the German interlocutor breaks the convention of short, positive answers to the “how are you” question and, in line with his understanding of the situation, considers these inquiries an invitation to elaborate on the matter. In another fragment, there are “disruptions” in the conversation (relatively long pauses) after questions about well-being – which may be due to the incompatibility of the ‘starting the conversation’ script. There are many more examples in the study similar to the ones described.

It may appear that the described research looks into completely trivial and insignificant characteristics of conversation. Nothing could be further from the truth. In the first half of the 20th century, Bronislaw Malinowski pointed this out, referring to the role played in communication by short and often pointless utterances about, for example, the weather, insignificant events, and obvious matters. He stated that these small talks help “establish the bonds of personal connection between people gathered in one place” (Malinowski, 1972). He called the realisation of this task the phatic function of communication. Moreover, some researchers have suggested that these seemingly trivial elements of conversation may have been the link in the evolution of apes to today’s *Homo Sapiens* (Dunbar, 2004). What was the hypothetical course of this transformation? Gathering in large groups, on the one hand, facilitates survival (thanks to, among other things, a greater ability to fend off predators), but on the other hand, it exposes them to dangers coming from other individuals from the same herd and requires cooperation and coordination of activities. According to the researchers, the mechanism that primates developed to maintain appropriate social bonds was grooming. During this activity, both the grooming and the groomed release endorphins that strengthen relationships in the herd. However, the effectiveness of grooming is limited – with other duties (such as obtaining food), the time that can be spent on it allows for the formation of a group of fifty individuals on average. And here, according to this concept, is to appear conversation, which, due to its characteristics (conversation is not limited to two participants, it can also be performed with other activities) allows to maintain more relationships in less time. Consequently, it allows to form a more numerous group. According to this hypothesis, language and the need to orient oneself in increasingly complex societies were the reasons for the development of human intelligence. In light of the above, are small talks trivial? Perhaps, but they have a special meaning for humans.

Adopting the assumption of simultaneous development of language and human communities allows us to look at intergender differences in linguistic communication in a different way. Intergender differences in the tasks

performed, which already existed in the pre-linguistic stage of development of *Homo Sapiens*' ancestors, may have been reflected in the forming language and the ways in which it was used. Moreover, this approach also implies that these pre-linguistic intergender differences in functioning, which were "imprinted" in the language, will be replicated through it and transmitted to subsequent generations. Because of the complexity of this process and its significant consequences for almost every sphere of human life, it is a frequent object of interest for a wide range of communication researchers in various contexts.

In one study of mothers' verbal interactions with their daughters and sons, the researchers managed to show that girls are asked more questions, mothers repeat girls' texts more often than boys' texts, and the average length of statements directed to girls is longer (4.4 to 3.7 words). On the other hand, commands and demands are formulated more often towards boys. The frequency of parents' conversations with their children about emotions – especially sadness – is also different. These conversations are more often conducted with girls, regardless of the gender of the parent. The same research showed that dialogues about emotions, if conducted with girls, are constructed in a way that emphasises their interpersonal nature. All these factors have a profound impact on formal differences in language use between adults of different genders. According to the study, men use longer words on average, use the pronoun "I" more often, use the present tense more often, make more grammatical errors, tend to use active voice, evaluative adjectives and references to the so-called social rightness ("most people," "everyone knows that."). In contrast, women's speech typically consists of more rhetorical questions, longer sentences, verbs specifying or referring to movement, adverb intensifiers, the use of oppositions and adverbial sentence starters. All these differences translate into very specific communication dilemmas affecting our daily functioning. One study tested communication efficiency in heterosexual dyads. Its results suggest that women more commonly take a passive position in interactions, especially towards men. They are also more likely to experience problems in interactions when the situation requires them to turn the passive position into an active, cooperative one and take part in solving a problem. In a similar way, the previously mentioned differences concerning sadness may result in different coping strategies in adulthood. In turn, greater ease in communicating and talking about emotions, as well as locating them in interpersonal space, may, by contrast, lead to women's different construction of various key concepts, such as love. This can lead to radically different behaviours and expectations that we have of loving relationships.

4 The Logic of Conversation – The Mechanism of Presupposition

The complexity and multifaceted nature of conversation is also the subject of research in modern logic (Budzyńska et al., 2015; Szymanek, 2001). Among the many issues addressed, we will draw attention to the logical mechanism of presupposition. It is included in many everyday conversations, is distinguished by the fact that it has a clearly delineated practical aspect and is also relatively easy to articulate.

Let us return to the previously mentioned example of visiting the in-laws. Let's say that this is already the second consecutive visit, it is no longer accompanied by stress, because the script of such a visit has been established. Let's assume that we are talking about Jack and Agatha, and that Jack is at Agatha's parents' place. Let's also assume that during a conversation over dinner, Jack's father-in-law asks him a question:

1. Have you Stopped Cheating on my Daughter Yet?

This is a resolution type of question, i.e. the correct answer to this question should be "yes" or "no". Nevertheless, surprised Jacek is in a difficult situation, because no matter what he answers, it comes out that he cheated on Agatha. If he answers "yes," it means that he cheated on Agatha, while if he answers "no," it means that he continues to cheat on her.

Note that if Jack's father-in-law had asked in a slightly different manner, i.e., if he had posed the following question:

2. Have you Not Stopped Cheating on my Daughter Yet?

Then Jacek would find himself in an equally difficult position.

Leaving aside Jack and his father-in-law, let us try to find the logical mechanism hidden in this example. For simplicity's sake, let's use an affirmative sentence:

3. He Stopped Cheating on Her.

And let us ask, does sentence (3) make logical sense, i.e., is it true or false? Sentence (3) is false if he still cheats on her, while it is true if he has cheated on her and no longer does so. If we assume that he has never cheated on her and is still not cheating on her, then sentence (3) can be neither true nor false. Therefore, the veracity of the sentence:

4. He Cheats on her,

is a necessary condition for the sentence (3) to have a logical value, i.e. to be true or false (true and false are two core logical values). In this case and in similar ones, we will say that sentence (4) is a presupposition of sentence (3).

Generally speaking, we say that a sentence P is a presupposition of a sentence Z if the sentence Z is determined as to its logical value if, and only if, P is true. Assuming that sentences with a certain logical value, i.e., being true or false, are meaningful sentences, we can say in short that P is a presupposition of Z if the meaningfulness of Z is equivalent to the truthfulness of P .

Note that Jack's father-in-law could have posed both question (1) and its (certain) negation (2), and their presupposition would still be sentence (4). Let's give a simpler example. Sentence:

5. Jarosław Kaczyński's Wife is a Beautiful Woman;
As well as its denial:

6. Jarosław Kaczyński's Wife is Not a Beautiful Woman.
We see that sentences (5) and (6) have one and the same presupposition, i.e., the sentence:

7. Jarosław Kaczyński Has a Wife.
If (7) were false, then both sentences (5) and (6) would have no logical value. Sentences (5) and (6) share the same presupposition, i.e., sentence (7). This general characteristic of presupposition is called invariance under negation.

Implicit in the relatively simple question of Agatha's father is a certain relationship as to logical value. This dependency is not very complex, nevertheless, the presented logical analysis is a certain beginning – often simple dialogue mechanisms lead to hidden and complex logical constructs such as dialogical logics, an accessible discussion of which can be found in: Budzyńska et al., 2015.

In Jack's defense, let's add that in response to such a dishonest question (2), he can simply cancel the presupposition, stating that he has never cheated on Agatha, and the question is asked with a dishonestly concealed (if in fact he did not cheat on Agatha) presupposition. Jack's example is somewhat exaggerated in order to make the reader more alert to the presence of presupposition in everyday conversations, particularly in view of the fact that presupposition is also one of the logical mechanisms of manipulation. Indeed, phrases like, "Our success is the result of years of effort," "Don't stress," "Don't chase money," "He keeps his agreements," "He broke his vows," can be part of manipulation. However, presupposition has many uses in a conversation, for example, it can shorten it, as in the following example:

- A. Did you enjoy the film?
- B. It's a film like any other.

The answer (B) can contain many pre-judgments, which by no means always have to be directly spoken in a dialogue situation. After all, answer (B) in the right situational context can mean:

(B') I didn't like the movie, it was boring and I don't want to watch any more movies made by this producer.

5 Treating with Conversation

Until now, we have mainly referred to private communication between people. However, it is the professional conversations that reveal additional layers of complexity of human communication. We will use conversations in the clinical work of psychologists and psychotherapists as examples.

In the psychological, especially psychotherapeutic practice conversation serves as a working tool. Through conversation, the psychotherapist obtains information about patients and builds a therapeutic relationship with them. Despite the apparent simplicity of asking questions and listening to answers – usually viewed as a natural ability that does not require perfecting – the multitude of tasks incumbent on psychotherapists who conduct conversations makes them the most difficult part of clinical work. Their complexity has so far failed to be put into foolproof procedures, and conducting therapeutic conversations is still largely seen as an art (MacKinnon et al., 2006).

Despite the long history of therapeutic interactions based on conversations, until recently, the reflection on the power of conversation was mainly theoretical, derived from declarations made by patients. One of the particular elements of the recent scientific debate on psychotherapy was the emphasis on the distinctiveness and competitiveness of various psychotherapeutic modalities and approaches. Cognitive-behavioural psychotherapy was contrasted with psychodynamic or humanistic-existential psychotherapy. However, this way of thinking – that the effectiveness of therapy is determined by the specific methods or therapeutic techniques – has increasingly been challenged by research indicating the role of engagement in therapy by both the therapist and the patient and the role of the relationship built through conversation (Norcross & Lambert, 2019a, 2019b).

Research findings indicate that the conversation and the relationship established through it are important factors influencing the process of therapeutic change (e.g., Hill & Norcross, 2023). Therapeutic success depends more on the

quality of the therapeutic conversation than on the techniques used to work with the patient. This proves the power of conversation.

However, the results of studies on the neurobiological mechanisms of psychotherapy are of particular interest to us, as they demonstrate the power of conversation even more evidently. They show that professional therapeutic talk alters the electrophysiological activity, biochemistry, blood flow and structure of patients' brains, which paves the way for changes in the behaviour and the way the patients experience life (Barsaglini et al., 2014). However, despite disagreement among researchers and reservations about the accuracy of brain imaging methods, a link between observed brain changes and the process of psychotherapy has been systematically demonstrated. Moreover, the magnitude of observed changes in the brain under the influence of psychotherapy is comparable to the effects achieved with pharmacotherapy or electroconvulsive therapy (Linden, 2006).

For example, it has been demonstrated that patients with excessive activity in the prefrontal cortex, which is typical for depression, experienced a decrease in this activity after a series of interpersonal psychotherapy sessions. The effect was similar to that achieved with pharmacotherapy (Brody et al., 2001). Another study has shown that in patients with a diagnosis of chronic fatigue syndrome, whose brains are characterized by a decrease in grey matter volume in the prefrontal cortex, gray matter volume increased after 16 sessions of cognitive-behavioural psychotherapy (de Lange et al., 2008).

Therefore, it turns out that therapeutic conversation has as much power to influence our brain as pharmacotherapy. And, while the correct brain function we referred to at the beginning of the chapter determines the possibility of having conversations, therapeutic conversations also have the power to influence the brain and, as a consequence, change our lives. The seeming simplicity of conversation translates into its complex and still not fully recognized effects.

Notes

- 1 The letter 'T' stands for a person carrying on a conversation, while 'R' stands for a man suffering from Broca's aphasia. A colon after a voice indicates a prolonged sound. The length of the pause between statements is indicated in parentheses. A period and a question mark indicate that the passage was spoken with a descending or ascending tonality, respectively.
- 2 The cited conversation is an excerpt from a video found on youtube at <https://www.youtube.com/watch?v=f2liMEbMnPM>. For other recordings in which similar problems are presented, search under 'aphasia' (e.g., 'Broca's aphasia' or 'Wernicke's aphasia').

References

- Barbara, G. (2008). Gender differences in the verbal expression of love schema. *Sex Roles, 58*(11–12), 814–821.
- Barsaglini, A., Sartori, G., Benetti, S., Pettersson-Yeo, W., & Mechelli, A. (2014). The effects of psychotherapy on brain function: A systematic and critical review. *Progress in Neurobiology, 114*, 1–14.
- Brody, A. L., Saxena, S., Stoessel, P., Gillies, L. A., Fairbanks, L. A., Alborzian, S., et al. (2001). Regional brain metabolic changes in patients with major depression treated with either paroxetine or interpersonal therapy: Preliminary findings. *Archives of General Psychiatry, 58*(7), 631–640.
- Budzyńska K., Kacprzak M., & Yaskorska O. (2015). *Dynamika dialogów w ujęciu formalnym [Dynamics of dialogues in formal terms]*. Warsaw: Publishing House of IFiS PAN.
- Coupland, J., Coupland, N., & Robinson, J. D. (1992). “How are you?": Negotiating phatic communion. *Language in Society, 21*(2), 207–230.
- De Lange, F. P., Koers, A., Kalkman, J. S., Bleijenberg, G., Hagoort, P., Van der Meer, J. W., & Toni, I. (2008). Increase in prefrontal cortical volume following cognitive behavioral therapy in patients with chronic fatigue syndrome. *Brain, 131*(8), 2172–2180.
- Dingwall, W. O. (2005). The biological basis of human communicative behavior. In J. B. Gleason & N. B. Ratner (Eds.), *Psycholinguistics* (pp. 65–120). Gdańsk: Gdańsk Psychological Publishing House.
- Dronkers, N. F., Plaisant, O., Iba-Zizen, M. T., & Cabanis, E. A. (2007). Paul Broca's historic cases: High resolution MR imaging of the brains of Leborgne and Lelong. *Brain, 130*(5), 1432–1441.
- Dunbar, R. I. (2004). Gossip in evolutionary perspective. *Review of General Psychology, 8*(2), 100.
- Eisenmann, B. (1997). Gender differences in early mother-child interactions: Talking about an imminent event. *Discourse Processes, 24*(2–3), 309–335.
- Fivush, R., Brotman, M. A., Buckner, J. P., & Goodman, S. H. (2000). Gender differences in parent-child emotion narratives. *Sex Roles, 42*(3–4), 233–253.
- Hill, C. E., & Norcross, J. C. (Eds.). (2023). *Psychotherapy skills and methods that work*. New York, NY: Oxford University Press.
- Linden, D. J. (2006). How psychotherapy changes the brain – the contribution of functional neuroimaging. *Molecular Psychiatry, 11*, 528–538.
- MacKinnon, R. A., Michels, R., & Buckley, P. J. (2009). *The psychiatric interview in clinical practice*. Washington, DC: American Psychiatric Publishing.
- Malinowski, B. (1972). Phatic communion. In J. Laver & S. Hutcheson (Eds.), *Communication in face-to-face interaction* (pp. 146–152). Harmondsworth: Penguin.

- Norcross, J. C., & Lambert, B. E. (Eds.). (2019a). *Psychotherapy relationships that work: Volume 1: Evidence-based therapist contributions*. New York, NY: Oxford University Press.
- Norcross, J. C., & Lambert, B. E. (Eds.). (2019b). *Psychotherapy relationships that work: Volume 2: Evidence-based therapist responsiveness*. New York, NY: Oxford University Press.
- Schank, R. C., & Abelson, R. P. (1977). *Scripts, plans, goals, and understanding: An inquiry into human knowledge structures*. Hillsdale: Erlbaum.
- Szymanek K. (2001). *Sztuka argumentacji. Słownik terminologiczny [The art of argumentation. A glossary of terminology]*. Warsaw: PWN.
- Taleghani-Nikazm, C. (2002). A conversation analytic study of telephone conversation openings between native and nonnative speakers. *Journal of Pragmatics*, 34(12), 1807–1832.