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# THE ESSENCE OF SEMIOTICS AS A MEDIATOR OF COMMUNICATION AND COGNITION

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# THE ESSENCE OF SEMIOTICS AS A MEDIATOR OF COMMUNICATION AND COGNITION

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#### **Abstract**

Studies in modern linguistic theory to determine the scope and vision of human communication have shifted their attention to semiotics, in which actions speak louder than words as some say. The semiotic capacity of an individual reflects the effective and efficient usage of pragmatic competence in which the language user has the awareness of sociocultural and anthropological conventions processed and produced in the course of communication. Such a capacity also enables a systematic usage of cognitive skills, thereby developing the value of the communicative context and the perception of the individuals in various discourses. This paper attempts to identify, decode, and proceed utterances in a systematic mixture of psychological, physiological, sociological and anthropological procedures, in which non-verbal expressions appear as signs and symbols to communicate information. It is also argued that not only do individuals attain semiotic information naturally, they also do so with proper curricular semiotic education (especially in language learning & teaching environment) and research. In this respect, studies in biosemiotics explore the micro and the macro cosmos of human nature which are in a continuous cycle of interaction to process language. It is further established that the curiosity to discover the value systems in human communication through semiotic decoding means more than the mere study of language and its linguistic properties.

*Keywords:* Pragmatics, Competence, Semiotics, Cognitive Theory, Communication, Cognition, Semiotic Education, Biosemiotics

## 1. Introduction

Scholarly research and studies to determine the limits of competence have been among the fundamental fields in linguistics and communication studies since the 1960s. After Chomsky published his book titled 'Aspects of the theory of Syntax', in 1965, the vision of linguistic studies shifted from a structural approach to a communicative frame. In his book, the notion of linguistic competence was put forward as the complete knowledge of the ideal speaker-listener in a homogenous speech community. Though this approach was at first appreciated by many scholars, the notion of linguistic competence was criticised for keeping the knowledge of language in isolation.

Wales and Marshall (1966) claimed that the theory of linguistic competence limits other verbal mechanisms that pave the way for more efficient human communication. Fodor and Merill (1966) emphasized the ease and the necessity of psychological mechanisms that help the language user formulate and produce accurate linguistic strings at the cognitive production stage. Choraih (2016) added that the integration of sociolinguistic factors to better understand the notion of 'competence' is a lot more important than framing linguistic knowledge in its own set of rules. In this respect, it is possible to say that the 60s decade came to an end upon a discussion to determine the limits of competence.



Yet, all the debate that was carried out throughout that era did not seem to be enough. Gumperz and Hymes (1989) further focused on the communicative aspects of language in varying sociocultural contexts that offered discourses in which verbal and non-verbal language would be practised critically and creatively. Canale (1983) drew the attention of linguistic studies to the development of personal skills and capabilities. For Canale, the development of such skills would help the language user establish better and more effective communication with the addressee. Widdowson (1983) studied the term 'schemata' which includes various cognitive processes that operate in a systematic manner. In turn, Bachman (1990) and Van Dijk's (1977) attempts to frame competence introduced a new dimension in the study of linguistics. Then, the term 'pragmatics' and its functions in linguistic interaction, its frame and use came under scrutiny, with Crystal (2008) defining it as:

"The study of language from the point of view of users, especially of the choices they make, the constraints they encounter in using language in social interaction and the effects of their use of language has on other participants in the act of communication" (p. 379).

Crystal (2008) approached pragmatics as a tool which operates functionally in various social discourses as well as intercultural communications. Leech (1983) studied how social conventions influence pragmatic processes. Linguistic studies in the 70s and 80s helped linguists to structure a fundamental basis for human communication, leading to a better understanding of perception and action. Especially, the studies to define the scope of competence, the cognitive and meta-cognitive processes it accommodates, and the ease of developing human skills and capabilities for a more successful social interaction all set up the foundations for semiotic studies. By concentrating on the principles of non-verbal interaction, semiotics finally completes the linguistic puzzle and gives more clues about human nature. As Kattsoff and Thibaut (1942) state:

"Since scientific knowledge is acquired to a large degree through the process of symbolisation, the role and properties of signs are extremely important. If we further realise that a sign is anything which denotes or means something to someone, then the importance of semiotic is extended to all spheres of human activity" (p. 475).

This definition appears to solve the puzzle upon future scientific studies. Today, semiotics, as will be investigated in further sections in this study, is a multidisciplinary linguistic field helping scholars to better understand the nature of human communication, its value systems and cognitive properties.

# 2. The Secret in Visuality : A Semiotic Approach to Human Interaction

The mechanisms to identify, decode and proceed utterances is a systematic mixture of psychological, physiological, sociological and anthropological procedures in which non-verbal expressions appear as signs or symbols to communicate information. The knowledge of signs and symbols exist in all competence types and operate functionally in human interaction to guarantee affluent interaction. Competence in semiotics was first studied by A. J Greimas. According to Pikkarainen (2014), Greimas:

"... tries to replace and generalise the Saussurean concepts of a language and parole with competence and performance respectively. Competence is something virtual which is actualised and realised in performance. He applies these concepts in all action instead of just linguistic or communicative action" (p. 626).



To understand the notion of 'action' in the Greimas process, which prepares the basis of the final act, should be taken into account together with the notion of competence. In this respect, competence is a neutral process which operates systematically and critically in the course of performing an act by referring to whatever verbal and visual is stored in an ideosyncratic manner. Here, we understand that human performance in the course of action have to be considered as a process performed in a certain time interval in which verbal and audiovisual cognition work together to respond likewise. In understanding 'what is said' and 'what is done', not only do verbal strings play a significant role, but also human's perception of understanding the sign and signals around him - body language - is a key factor that helps the individual to communicate meaningfully. Barley (1983) states that:

"... semiotics concerns the principles by which signification occurs. Signification refers both to the processes by which events, words, behaviours, and objects carry meaning for the members of a given community, and to the content they convey. Therefore, semiotics is ultimately the study of how communication is possible, since all communication presumes shared codes. The essence of semiotics is the isolation of systems of signification and the rules that govern their use" (pp. 394-5).

For Goodman (1968), the sign represents a definition resulted from a human action who intentionally picks an object as a sign to represent something different. Moreover, Adler (1991) adds that:

"translating meanings into words and behaviours - that is, into symbols - and back again into meaning is based on a person's cultural background and is not the same for each person. The greater the difference in background between senders and receivers, the greater the difference in meanings attached to particular words and behaviours" (p. 2).

Adler (1991) also presents a 'Communication Model' as in the following figure:

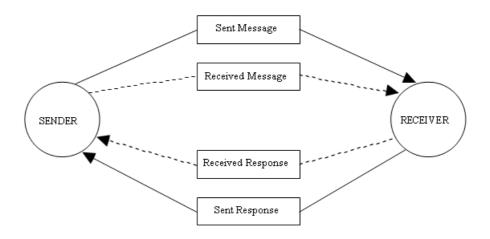


Figure 1. Adler's Communication Model

Considering Adler's explanations and the figure represented, the key point in this respect is perhaps how successfully the message sender and the message receiver are able to get the intended message, respond likewise, avoid miscommunication and continu the flow of information. In this respect the definition of semiotics by Seel, perhaps, brings together different visions:



"... semiotics aims at bringing together those scientists of different disciplines who are interested or engaged in the investigation of the use and manipulation of signs in different settings such as communication and instruction" (p. 2).

The use of signs for multiple purposes in human interaction is a neutral process to convey information. The addresser and the addressee exchange information by making use of signs either to approve or stress their verbal message, save energy, or mean more by making use of signs that would possibly cost tens of words.

## 3. The Development of Semiotic Ability

The recognition and comprehension of signs in the environment does not occur naturally; nor does it require special training. It is related to several factors. One of them is how successfully the individual has acquired the necessities of a language so far. The development of grammatical and communicative competences call for the use of signs specific to purpose in various discourses. To illustrate, Bachman's (1990) notion of communicative language ability holds an integrated model of linguistic, strategic and psycho-physiological mechanisms in which language is critically sequenced within certain mentally initiated stages and processed in a multidimensional manner based upon an action to be performed.

Next is how the linguistic and the social behaviours are structured in the language user and to what extend the knowledge of the world is developed. About this, Mey (1993) states that the communicative context in which a linguistic interaction takes place has its roots in any given society which accommodates social, political, and economic rules and regulations, norms and perspectives (p. 186-187).

Here, it is important to note that an individual should be knowledgeable about various contexts that take place in multiple discourses. Several examples can be given in this respect. Think of a university lecturer who is teaching a linguistics course at the 8:30 slot at the faculty, and students who could hardly arrive at school because of the heavy snow. Though the she asks her students how they feel, by carefully focusing on the body language of the students, the placement of the desks and stationery, even the frequency of the verbal responses of the students appear as signs and give clues to her about the extent she should push them in the early hours of a morning course. The grasp of the silent message conveyed by the classroom could only be achieved by training the mind to recognise codes in the extralinguistic environment.

Relatedly, another example can be given from the world of politics. A politician who uses the lectern effectively in his speech is commonly favoured over those who do not, but what does precisely lie in that 'efficient usage'? Posture - the position of the body - in the course of speech, the position of the hands on the lectern, facial impressions, gestures and movements to add/approve/stress meanings in his speech, the tone, intonation and junctures used during the speech, selection of culture-specific symbols and their usage in the speech, other signs or symbols around the lectern that would come to various sociocultural meanings, the way the politician dresses and even the colours he prefers to dress in are some of the semiotic tools that not only value interaction but add more meaning to what is said and meant.

The third factor is how successfully a cross-cultural interactional competence has been developed by the language user. The establishment of cultural awareness plays a significant role to detect and use signs to flourish successful interpersonal communications. For Kress (2012):

"Given the way I use the terms 'culture' and 'society' - society as the domain of action and power and culture as the repository of cultural/semiotic resources...Communication, for me, is a social practice/event, in which cultural/semiotic resources are used" (p. 24).



Kress (2012) emphasizes the existence of two resources: the 'society' as the source of action and 'culture' as the source of semiotics. For him, meaning in any kind of interaction should include these two. He adds that, "What is needed however is an adequately large frame which includes all aspects of meaning, of meaning-making, of society, culture, power. In social semiotics that frame is an apt understanding of communication" (p.24). However, being a member of a given society does not guarantee the awareness of cultural and traditional practises and semiology produced within. Individuals indirectly or unconsciously acquire some of the cultural signs in their lifetime and practice them consciously or unconsciously in various sociocultural discourses. However, becoming aware of a broader sense of semiology requires intercultural training. Parent and Varnhagen (2011), in their article 'Designing a semiotic-based approach to intercultural training', offer to design a semiotic-based course in intercultural training in which the students/trainees would find the opportunity to obtain more input as to the world around them, expand their horizons and develop their global personality. They state that "Intercultural education, therefore, called for a process by which to assist learners in working with different social constructs and world views (values and beliefs) so as to resolve, at least partially, often complex and urgent issues, through process and products for exchange" (p.155). Without doubt, such a carefully planned course will not only lav a strong background for semiotic competence, but also create more opportunities to exchange information in different contexts coming up in varying sociocultural discourses.

Parent & Varnhagen (2011) add that "The multidimensional design for a semiotic-based training model subsequently began with a hypothesis that the semiotics of culture might further assist in defining how meaningful initiatives could be created and communicated through the process of exchange" (p.155). To illustrate, some airline companies and tourism agencies provide their passengers with the opportunity to travel to foreign countries by giving them a handbook that includes both verbal and non-verbal (or gesture) language tips to communicate. The use of hands, position of the body, arms, and facial expressions can convey different meanings and their unconscious use could lead to unexpected results as you one interacts with others abroad. A handbook such as this, then, is essential material - a little freelance opportunity for intercultural training for people who travel abroad.

Another factor that paves the way to more purposeful semiotic communication is the development of cognitive flexibility. Shaumyan (1987) states that "Cognitive flexibility is a fundamental property of any natural language. Owing to this property, any natural language is remarkably rich, complex, and infinitely variable and productive of signs" (p.18). In this respect, Shaumyon's words "rich & complex" need more emphasis.

The wealth of the English language can be given as an example. English has a concoction and a rich variety of synonyms for words with similar meanings. As for the word 'love', there are many alternatives and the richness of the English Language vocabulary enables its users to express their emotions for specific contexts depending on how their cognitive perception of love adds extra meanings to the stem depending on the context in which it is used. A native may use such alternatives which share the same basic roots, yet convey different meaning on the surface.

-passion : the strong emotion of love;

-amour : the romantic aspect of love;

-worship : the honour/glory aspect of love;

-admire : appreciation for love;

-cherish : how deeply one cares about something they love.



A similar example can be given for the word 'holiday':

-trip : A journey, excursion.

-tour : A journey to various addresses.-break : A fissure, a short stop to work.

-vacation : A previously planned time interval for not working.

-sojourn : A brief period to travel.

-voyage : Sea travel.

All of these words conveyed the intention to 'stop working for a while and take some rest' the way a person wishes. Again, though on the surface level all of the words have different intentions 'to have a holiday', at deep level all have them have the same single theme. Here, it might be useful to concentrate on how the mind finds the right words and images them as signs. A voyage which means a sea travel is imaged by a ship, sea, sun, perhaps even people freezing on board, etc. Yet, it is not the same for the word 'tour'. Whether you do it by plane, in your own car or by sea, it does not matter and the symbolic image that refers to the word 'tour' represents visiting several cities, countries, different food, customs, traditions, touristic places and interaction with different people. About this, Seel (1999) states that "Thinking and reasoning are considered as a symbol manipulation process that enables individuals to form and express subjective experiences, ideas, thoughts and feelings" (p.3). Seel's 'manipulation of symbols' enables the formation of multi-perspectives in the cognitive perception of the individual to achieve the appropriate message specific to that particular discourse. Seel adds that "... the term of mental representation became one of the most important theoretical concepts of cognitive psychology" (p.4). In this regard, the cognitive perception of an utterance as a sign/symbol in the mind is studied within cognitive psychology which R. G. Gross, in the 'Dictionary of Theories' (2002), defines as:

".... a collective term for psychological theories seeking to explain thought processes with reference to the relationship between subject and object, thought and world. Cognitive theory is principally concerned with investigating the conditions for cognition: the structural and functional architecture of the knowing or cognising organism or system" (p.98).

The linguistic interpretation of Gross's definition of cognitive psychology can be the critical evaluation of a particular linguistic discourse in psychological processes in which verbal and non-verbal linguistic systems act together to communicate information. In a broader sense, Zimmer M. R. in the 'Dictionary of Theories' (2002) state that the psychological meaning in the context of occurrence in a combination of 3 factors are explained as follows:

- 1) Individual Characteristics: (e.g. attitudes) perceptual selectivity, cognitive consistency and personality.
- 2) Social Characteristics: (e.g. gender) social class, marital status and occupation.
- 3) Situational Characteristics: (e.g. level of familiarity) number of available choices, time to make decision, while on vacation, while at work. (p. 33).

Briefly put, Zimmer's definition and classification of psychological meaning represents a summary of the first three factors that are required for semiotic comprehension. Therefore, it can be said that both semiotic comprehension and communication require a series of



linguistic, psychological, sociological and anthropological conventions in which the language itself, along with the context it is embedded in, provides semiotic tools to value and better understand human communication.

# 4. The Significance of Developing Semiotic Awareness in Education

Previously it has been argued that human cognition, anthropological properties of human existence, pscho-social processes and the experiences achieved under certain biological factors are in continuous interaction in the process of communication. In this respect, the question is whether this interaction can be developed through proper education at school so that semiotic awareness could find more room to develop its assets.

Over the last 50 years, a considerable number of language learning and teaching methods have been developed and put into practice. Undoubtedly, the common aim shared by these methods was to teach a language in the most influential way as possible. Meanwhile, the course materials, activities, content of lectures and practises, physical classroom environments, and even the teachers' attitudes to students - pedagogically or behaviourally were structured carefully. It has been understood that unless the teaching and learning approaches/methods are designed visually in a careful manner, verbal instruction fails to achieve its desired purpose in language learning and teaching. Every language learning method/approach addresses a different aspect of human competence and intelligence. Robinett (1978) states that "each word used in the EFL classroom is conditioned on the part of 'both speaker and hearer' by each person's own particular, personal experiences and those experiences that are common to the culture of which he or she is a part" (p.113). Each language class encodes cultural, social and humanistic features which embody the skills and capabilities required to provide better communication in the target language. Danesi (2010) considers signs and symbols as an integrated system in which the roles of every signifier imply messages to the audience. He states:

"Semiotics is ultimately a form of inquiry into how humans shape raw sensory information into knowledge-based categories through the use of forms that stand for the categories. Signs that penetrate the flux of information are intelligent selections which are taken in by our senses or our intuitions, allowing us to encode what we perceive as meaningful in it and thus, to learn and remember it" (p.ix).

In the language classroom, it is not possible to isolate the theory of language from its sociocultural aspects. If one has the desire to learn a language to realise better communication in the target context, the socioculturally-oriented signs and symbols help learners to more easily remember specific features if presented verbally; otherwise, it would take many pages to read in books or paragraphs. Indeed, one might call it thinking and perceiving through signs and symbols. A language learner in this respect is in a continuous process to establish a psychosocial connection between their senses - that receive information - and conscious - that process information.

Semiotics, on the other hand, has been in continuous interaction with education since its birth. Nöth (2010) claims that "Semiotics is relevant to education in two respects: On the one hand, teaching and learning have semiotic implications since they are both processes of semiosis; on the other, the study of processes of learning and teaching are part of, and contribute to, the study of the ontogeny of signs and communication, which is a branch of semiotics" (p.1). Since both disciplines overlap in the interest of each other, it will be groundless to discuss the extent that educative practices contribute to the development of global semiology. However, it is possible to say that the more foreign languages an individual learns, the more his perception of the world develops since he not only obtains



linguistic data through verbal influx, but also with the help of visual input which consolidates the efficiency and the effectiveness of language learning and development of communicative and pragmatic competences, which again critically and creatively co-operate in the course of language production.

About teaching semiotics in primary, secondary and in higher education, Morris (1946) argues:

"Semiotics as a separate discipline need not be introduced into the early levels of the school system. The acquisition of skills is not facilitated by undue attention about such skills. Skill in the use of signs would not be best served in the early THE SEMIOTICS OF TEACHING 7 years of education by the too early introduction of a technical semiotical vocabulary. But in a non-technical language, and throughout every phase of the educational system, it would be possible to acquaint students with the main kinds of signs, and the purposes which they serve. . . . At the level of higher education, a specific and detailed study of semiotic can serve to raise to fuller awareness the training in the adequate use of signs which should have occurred throughout the earlier levels" (pp.325-26).

However, despite the ideas of Morris, Thomas (1984) and Mariana Ciampicacigli (1985) were in favor of developing a curriculum with course materials that would offer the fundamentals of semiotics in various discourses in authentic contexts.

Briefly, semiotic data has been achieved through visual and verbal input as a baby is born and continues its development in school years in different activities and discourses. Yet, about teaching semiotics at the university level Semetsky states:

"Semiotics as an explicit subject of teaching is primarily a matter of classes, courses, and programs at the university level. It is taught as a course in programs of semiotics as well as in language, communication, and media studies, but it is also offered as an element of classes not only dedicated to semiotic topics in language, cultural, or media studies. Introductions to semiotics have been written for purposes of orientation, giving a survey, or in order to be uses as course books" (p.10).

Taking all the above discussions into account, it can be said that semiotics needs to be accepted as an interdisciplinary subject with room to be covered in various academic discourses. However, to give value to learning and teaching activities, semiotic elements can be consciously used to increase the efficiency, effectiveness and value of teaching-learning activities designed pedagogically in a proper curriculum.

# 5. Conclusion: Biosemiotics and The Essence Of Developing Semiotic Knowledge

The reality that individuals experience everyday has an objective existence and is independent of human cognition and interpretation. The verbal processing of information conveyed by the language producer cannot be isolated from its visual interpretation. Individuals who have increased their awareness about semiology become successful interpreters of language. In this way not only the clarity, appropriacy and effectiveness in language production are to be provided, but also doors to a stronger intercultural communication need to be opened. This brings us to the concept of semiotics as a global phenomenon, the biosemiotics, which explain semiotic interaction as a natural process. It is "... the investigation of the biological nature of signs and semiotic base of biology" (Sharov, p.345). Biosemiotics does not distinguish between nature and culture; rather, it is a link that matures human communication. For Hoffmeyer (1999), regarding biosemiotics: "...... living nature is understood as essentially driven by, or actually consisting of, semiosis, that is to say,



process of sign relations and their signification -or function- the biological process of life" (p. 4).

For Brier (2015), the social and biological behaviour which embodies the sender and the receiver's communication of signs is based on bio-psychological meanings. Brier's definition of biosemiotics is considered within the bio-psychological processing of information which helps us to better understand the principles of information processing in human communication. In this respect, the biosemiotic model can also be considered as the mediator of disciplines that contribute to language production for communicative purposes. The macro and the micro cosmos in which human nature interacts provides further details to understand more of communication. Hofstadter further emphasizes the significance of influence of symbols in human behaviours, not just in communication. Also, according to Kravchenko (2006):

"Living systems are unities of interactions which exist in an environment. From a purely biological point of view they cannot be understood independent of their niche (the part of the environment with which they interact). Likewise, the niche cannot be determined independent of the living system which specifies it" (p. 59).

For Hofstadter (1983) "Not only are we not symbol manipulators; in fact, quite to the contrary, we are manipulated by our symbols" (p. 279). Brier (2015) adds that "... there is a complicated psycho-biological development and dynamic system organized behind the embodied, embedded and enacted perception, thinking and communication" (p. 578). The study of semiotics in this respect means more than the study of signs. Human cognition, the anthropological realties of human existence, the psycho-social processes, the biological factors, the living cosmos of human nature are all in a continuous process of interaction to process language. Morris (1974), as some scholars do, consider semiotics, independent of linguistics, as a new discipline in science. For Morris:

"Semiotic has a double relation to the sciences: it is both a science among sciences and an instrument of the sciences. The significance of semiotic as a science lies in the fact that it is a step in the unification of science, since it supplies the foundations for any special science of signs, such as linguistics, logic, mathematics, rhetoric and (to some extent at least) aesthetics. The concept of sign may prove to be of importance in the unification of the social, psychological and humanistic sciences in so far as these are distinguished from the physical and biological sciences" (p. 2).

Therefore, it can be said that the essence of studying semiotics lies in the curiosity to discover the value systems in human communication. The value systems, the intrinsic and natural messages they convey, the way they are produced, transferred or perceived in human mind definitely require more than the study of language and its linguistic properties. However, there can be no doubt that studies in linguistics as an independent field of science paved the way to explore more of what there is in sign systems. It is seen that the nature of human language needs to be considered as a living organism which also reflects the evolutionary development of science. Here, the nature of signs and the value systems they hold, can be accepted as the engine that powers this system. As long as the evolution of sciences and their value systems evolve, there will be more to talk about semiotics as a mediator of communication and cognition.



#### References

- Adler, Nancy J. (1991). *International dimensions of organizational behaviour* (2<sup>nd</sup> ed.) Boston, MA: PWS-KENT Publishing Company.
- Bachman, L. F. (1990). Fundamental considerations in language testing. Oxford: Oxford University Press.
- Barley, S. R. (1983). Semiotics and the study of occupational and organizational cultures. *Administrative Science Quarterly*, 28(3), 393-413.
- Brier, S. (2015). Can biosemiotics be a "science" if its purpose is to be a bridge between the natural, social and human sciences? *Progress in Biophysics and Molecular Biology*, 119(3), 576-587. doi:10.1016/j.pbiomolbio.2015.08.001
- Canale, M. (1983). From communicative competence to communicative language pedagogy. In J. C. Richards & R. W. Schmidt (Eds.), *Language and communication* (pp. 2-27). London: Longman.
- Chomsky, N. (1965). Aspects of the theory of syntax. Massachusetts: M.I.T.
- Choraih, M. A., Loutfi, A., & Mansoor, A. (2016). The importance of pragmatic competence in the EFL curriculum: Application and implications. *Arab World English Journal*, 7(4), 183-195.
- Cognitive Theory Psychology. (2002). Dictionary of theories, 98.
- Crystal, D. (2008). Dictionary of linguistics and phonetics. Malden, MA: Wiley-Blackwell.
- Danesi, M. (2010). Foreword: Edusemiotics. In I. Semetsky (Ed.), *Semiotics education experience* (p.ix). Roterdam, Netherlands: Sense Publishers.
- Fodor, J. & Merill G. (1996). *Psycholinguistics papers: The proceedings of the 1966 Edinburgh Conference*. In J. Lyons, & R. J. Wales (Eds.), Edinburgh: Edinburgh University Press.
- Goodman, N. (1968). *Languages of art. The approach to a theory of symbols*. Indianapolis. IN: Bobbs-Merill Comp.
- Gumperz, J. J., & Dell H. H. (1989). Directions in sociolinguistics: The ethnography of communication. Oxford: Basil Blackwell.
- Hoffmeyer, J. (1999). The vague boundaries of life. In E. Taborsky (Ed.), *Semiosis, evolution, energy. Towards a reconceptualization of the sign*. Aachen: Shaker Verlag.
- Hofstadter, D.R., (1983). Artificial intelligence: Subcognition as computation. In F. Machlup & U. Mansfield (Eds.), *The study of information* (pp. 263-285) Wiley: New York.
- Hymes, D. H. (1972). On Communicative Competence. In J. B. Pride & J. Holmes (Eds). *Sociolinguistics: Selected readings* (pp. 269-293). Harmondsworth: Penguin.
- Kattsoff, L. O., & Thibaut, J. (1942). Semiotic and psychological concepts. *Psychological Review*, 49, 475-485.
- Kravchenko, A. (2006). Cognitive linguistics, biology of cognition and biosemiotics: Bridging the gaps. *Language Sciences*, 28(1), 51-75. doi:10.1016/j.langsci.2005.02.002
- Kress, G. (2012). Thinking about the notion of "Cross-cultural" from a social semiotic perspective. *Language and Intercultural Communication*, 12(4), 369-385.



- Leech, G. N. (1983). *Principles of pragmatics*. London: Longman. Mey, L. J. (1993). *Pragmatics: An introduction*. Oxford: Blackwell.
- Mariani Ciampicacigli, F. (1985). Guida a una Semiotica per la Scuola. Roma: Riuniti.
- Morris, C. W. (1946). Signs, language and Behaviour. New York: Braziller.
- Morris, C. (1974). Fondements de la theorie des signes (Foundations of the theory of signs). *Languages*, 8(35), 15-21.
- Nöth, W. (2010). Zeichen und semiose. In O. Braun & U. Lüdtke (Eds.), *Enzyklopadisches Handbuch der Behinderten Padagogik, Bd. 8. Sprache und Kommunikation,* Stuttgart: Metzler.
- Parent, R., & Varnhagen, S. (2011). Designing a semiotic-based approach to intercultural training. *Sign Systems Studies*, *39*(1), 145-182.
- Pikkarainen, E. (2014). Competence as a key concept of educational theory: A semiotic point of view. *Journal of Philosophy of Education*, 48(4), 621-636. doi:10.1111/1467-9752.12080
- Robinett, B. W. *Teaching English to speakers of other languages: Substance and technique.* Minneapolis: University of Minnesota Press.
- Seel, N. M. (1999). Semiotics and structural learning theory. *Journal of Structural Learning & Intelligent Systems*, 14(1), 1.
- Semetsky, I. (2010). Semiotics education experience. Rotterdam: Sense Publishers.
- Sharov, A. A. (1992). Biosemiotics: Functional-evolutionary approach to the analysis of the sense of information. In: Sebeok, T.A., & Umiker-Sebeok, J. (Eds.), *Biosemiotics: the Semiotic Web* (pp. 345-373). Mouton de Gruyter, New York.
- Shaumyan, S. (1987). A semiotic theory of language. Bloomington: Indiana University Press.
- Thomas, D. W. (1984). Project semiotics and the Schools. In T. Borbe (Ed.), *Semiotic unfolding* (Vol. 1, pp. 630-640). Berlin: Mouton.
- Van Dijk, T. A. (1997). Context and cognition: Knowledge frames and speech act comprehension. *Journal of Pragmatics*, 1(3), 211-231.
- Wales, R. & John M. (1996). *Psycholinguistics papers: The proceedings of the 1966 Edinburgh Conference*. In J. Lyons, & R. J. Wales (Eds.), Edinburgh: Edinburgh University Press.
- Widdowson, H. G. (1983). *Learning purpose and language use*. Oxford: Oxford University Press.

