# Osgood's semantic differential: a review of the Romanian social sciences literature

**Alexandru-Constantin Strungă**
*University of Craiova, Romania*

## Abstract

Starting from 1957, with the seminal book of Osgood, Suci and Tannenbaum's 'Measurement of Meaning', the semantic differential rapidly developed as a complex and subtle research instrument used for measuring social sentiments and attitudes with profound consequences for the social sciences research methodology. The aim of this paper is to analyze how the semantic differential was defined and presented in the Romanian social sciences literature and how it was progressively adopted by the Romanian methodologists from a variety of fields: psychology, sociology and education sciences.

**Keywords**: Osgood's semantic differential, social sciences methodology, qualitative research, EPA structure, measurement of meaning

Developed somewhat in parallel or after a few decades at most after the intelligence and personality tests, derived from attitude scales and invoking the same principles and methods of statistical and experimental standardization of the latter, the theoretical and instrumental bases of Osgood's Semantic Differential (OSD) were built since 1957 by Osgood, Suci and Tannenbaum and presented in their seminal book 'The Measurement of Meaning' (Osgood, Suci and Tannenbaum, 1957). However, it is true that detailed information about OSD appeared in the Romanian social sciences literature much later, after 1989, first in sociology dictionaries. Although Osgood and his collaborators have not introduced Romanian in the indigenous languages studied, nor in 1957 or 1975, the Romanian specialists were aware of all attempts to improve the methodology

in the study of social attitudes and social sentiments measurement. Thus, professor Paul Popescu-Neveanu, in the 1978 edition of the well-known 'Dictionary of Psychology' wrote an article on semantic differential, defined as "the phenomenon of meditation (comparison) in linguistic relations", by which he considered that we can investigate not only the semantic content but also "affective-paradigmatic meaning". Moreover, the great Romanian psychologist demonstrates an optimistic attitude, mentioning that such an instrument could cause, at least in social and personality psychology, to "fruitful results" (Paul Popescu-Neveanu, 1978).

Semantic differential's methodological reverberations were felt not only in psychology, but also in sociology. Numerous references to the semantic differential we can find in the work of Ioan Mărginean - 'Measurement in Sociology'. Proposing the concept of dimension of social measurement, Professor Mărgineanu differentiates one-dimensional from composite scales construction and multidimensional measurement. The multidimensional model, appeared in the context of index measuring, made "a non-dimensional measurement on areas that are not one-dimensional, but which had not been identified with sufficient precision in terms of the nature of the internal structure, inter-correlations components" (Mărginean, 1985). We can present the application stages of semantic differential in an excellent algorithm developed since the 80s, in the Romanian methodology, adapted from Professor Mărginean.

| Nr. crt. | Etapa |
|----------|-------|
| 1. | Selecting the concepts |
| 2. | Choosing pairs of opposed adjectives |
| 3. | Construction of a scale with 7 (Osgood) or 9 (Heise) steps |
| 4. | Writing the questions |
| 5. | Application of the instrument |
| 6. | Statistical analysis of data |
| 7. | Identifying factor patterns |
| 8. | Analysis of statistical results |
| 9. | Interpretation of results |
| 10. | Formulating the conclusions |

Table 1. Stages of application for OSD (adaptation after Mărginean, 1985)

Multidimensional measurement is often associated with spatial measurements, which in turn 'is based on graphical transposition of the degree of association (resemblance, similarity, correlation) respectively the degree of dissociation' (ibidem, p. 189). Among the most significant three-dimensional extensions are, in the opinion of the author, the complete triad technique and technique of successive intervals. Besides these, we find the semantic differential that allows capturing emotional and attitudinal meanings on some events and activities. The multidimensional character of the semantic differential, refers to the three dimensions of EPA model. The Romanian sociologist proves to be particularly careful regarding the measurement techniques, putting a particular emphasis on the operational aspect of the research. In addition to the standard phases for choosing the concepts and pairs of adjectives, the author insists on placing both polar adjectives in a hierarchical scale and on the overall development of the questionnaire 'comprising scales with polar adjectives listed in a random order'. Information processing by factoring is followed in the operational model of professor Mărginean, by the shaping and defining of factors, separately from 'the analysis of the results and interpretation of information'. Along with the standard method of calculating distance, the author believes that "information can be interpreted at a lower level of processing, directly analyzing subjects' answers and making direct comparisons between scales and between communities based on scores of some profiles", which provides greater flexibility in the use of semantic differential in various areas of psychosocial work.

In the first edition of the monumental 'Dictionary of Sociology', published at Babel in 1993, Professor Lazăr Vlăsceanu, a renowned Romanian specialist in both sociology and education sciences, wrote a substantial article about the semantic differential, recommending it in the same time to young researchers. Without leaving the classical patterns of understanding semantic differential as 'a method of measuring and analyzing semantic connotations of social concepts', Professor Vlăsceanu argues that semantic differentiator can be particularly useful in studying relational activities, especially for measuring attitudes. Moreover, the article presented useful information on operationalizing the semantic differential: there are mentioned as main operations, firstly, choosing concepts and second, choosing "relevant adjectives." According to the

author mentioned above, the interpretation of data obtained by the application of semantic differential for identifying the degree of 'homogeneity or differentiation of concepts belonging to the same semantic space with respect to the same subject, different subjects or groups of subjects' (Vlăsceanu, 1993 in Zamfir and Vlăsceanu, 1993). For data interpretation, Vlăsceanu mentions two methods: a) calculation of the distance between concepts based on advanced statistical formulas and b) calculation of correlation coefficients 'of semantic distances D, represented by pairs of matrices, considering that D, from the same IJ cells [the analyzed concepts], from two different matrix form ordered pairs " (idem). The author recommends the usage of advanced statistical processing methods such as factor analysis or cluster analysis.       One of the best analyses of the semantic differential belongs to the famous Romanian methodologist Septimiu Chelcea, in his famous work – 'Sociological Research Methodology' (in Romanian: Metodologia cercetării sociologice). Professor Chelcea defines the semantic differential as a scaling technique, in the same class as the following techniques: *Guttman* (e.g. for measuring military morale), *Thurstone* (e.g. used for measuring attitudes towards divorce), *Bogardus* (evaluation of social distance), *Super* (professional values inventory), those of Nowicki and Stickland's or his own inventory of ethnic attributes.

Specifically, Professor Chelcea adopt some of the Heise's theoretical landmarks, according to which, Osgood's semantic differential can be understood as a 'measurement technique of people's reactions to stimuli from the environment and concepts using bipolar or grading scales' (Heise, 1967-1970 apud Chelcea, 2004).

As it is already known, Osgood and his collaborators started in the construction of the semantic differential from the principle of congruence of psychological processes, especially when they are analyzed in terms of affectivity and placed in a semantic field. The descriptive projection of affective processes can be accurately measured and statistically validated even, as was done in the methodology of the projective and sociometric tests. In other words, the author indicate that it is an "indirect determination" in the meaning proposed by Bailey, who advanced the idea of measuring feelings "probably subconscious of subjects with respect to certain concepts or things" (Bailey, 1978/82 apud Chelcea, ibidem). Such methodological considerations derive from the principle that some affective processes, especially those coming from the subconscious, can sometimes have a greater relevance than conscious mechanisms and can therefore be easily observed, quantified and measured. Furthermore, the instrument presented by

Professor Chelcea can be successfully applied in the determination of subtle nuances of mental images and representations in terms of professional identity dynamics. Although the Romanian methodologist used the semantic differential with outstanding results in the field of marketing, he resumed and concretized Kerlinger's suggestion according to which the educational environment is quite suitable for the use of the semantic differential, even proposing osgoodian concepts such as school, child, learning, principal, subject, and others (Kerlinger 1973 apud Chelcea, 2004). Another argument for the application of the instrument in education, particularly curriculum studies (Bunăiașu, 2011) is that the latter is an area of cultural and symbolic reproduction of society and of very different groups with influence. It is therefore subjected to a methodological logic of cultural studies, which aims to an *in situ* valorization of European mental images exactly in the places where they are created (Heise, 2010).

The results obtained in other studies, however, have led us to distance ourselves, to some extent, from the 12 scales advanced by Kerlinger (Strungă, 2014). The binomial adjectival antonyms used by us (Strungă, 2014) in previous studies were selected through pancultural core strategy that requires the use of polar couples who have the highest occurrence in the pancultural study conducted by Osgood and his collaborators in 1975 (Osgood, May and Miron, 1975). In addition to recommending the use of semantic differentiator in education sciences, the Romanian sociologist highlights the ability of the instrument to test attitudes and also suggests the adopting of some standardization techniques principles from the realm of psychological testing. Semantic differential's relevance for the study of attitudes is supported by other specialists (Babbie, 2007; Heise 2010), especially to identify the particular emotional meaning of some concepts, on the evaluation dimension, of critical importance in sociological research.

Estimating the semantic differential's validity and standardization potential, Professor Chelcea mentions Heise's methodological contribution from 1965, who "by factor analysis of data obtained through the application of eight scales (pairs of bipolar adjectives) to a thousand most common words English language", identified EPA structure, confirmed by the research done by Akuto in Japan, who "identified EPA structure following the application of 50 scales for 90 concepts to 100 subjects" (ibidem). The Romanian sociologist is the first specialist from Romania that highlights the importance of the three dimensions identified by Osgood in 1957 (assessment, potency and activity), even managing to

implement them in research done in the field of marketing. There are also interesting the data processing procedures obtained by the use of semantic differential recommended by Professor Septimiu Chelcea:

- if we are interested in the emotional intensity of the concepts, then we can measure the polarization by analyzing the scores of each scale.
- the presentation of EPA structure in a three-dimensional way that would facilitate the placement of any concept in the semantic field space and the understanding of the links which it has with other similar stimulus-objects;
- creating a scale values to the adjectives of semantic differential, after Baggaley and Duck's models also recommended by Fiske (Baggaley & Duck, 1976 apud Chelcea, 2004; Fiske, 1990/2003 apud Chelcea, 2004).

In previous studies, we constructed a semantic differential scale with 8 concepts: European elementary school teacher (Învăţător european), Romanian elementary school teacher (Învăţător român), European primary teacher training school (Şcoala europeană de formare a învăţătorilor), Romanian primary teacher training school (Şcoala românescă de formare a învăţătorilor), European primary school teacher (Profesor european în învăţământul primar), Romanian primary school teacher (Profesor român în învăţământul primar), European primer (Abecedar european) and Romanian primer (Abecedar românesc). We also used 10 pairs of bipolar pairs of adjectives for each concept, namely: sweet - bitter (dulce - amar), good - bad (bine - rău), correct - incorrect (correct - incorect), beautiful -ugly (frumos - urât), active - passive (activ - pasiv), powerful - weak (puternic - slab), coherent -incoherent (coherent - incoerent), simple - complex (simplu - complex), warm - cold (cald - rece), bright - dark (luminos - întunecat). By combining the two dimensions (concepts and bipolar pairs of adjectives) we constructed 80 synthetic indicators. On a 7-point linear scale, the subject indicated their preference for each pair of adjectives, the lowest value being 1 and the highest value 7, while the central value indicated a neutral opinion. For each variable, higher values indicated negative emotions, attitudes and opinions while the lower values indicated positive emotions, attitudes and opinions (Strungă, 2014).

In conclusion, the semantic differential is a research instrument relatively less studied in the Romanian social sciences literature. However, it has a great potential of analyzing subtle and complex phenomena (such as social representations and mental images) of great significance especially in education

sciences. Further studies are necessary in order to create the methodological framework of application in other fields as well.

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