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### SOME THEORETICAL AND METHODOLOGICAL ASPECTS OF STUDIES IN HUMAN COMMUNICATIONAL BEHAVIOR

Most of the recent work in human communicational behavior has been concerned with such aspects of face-to-face interaction as spacing, orientation, gesture, posture, diffuse body movement, facial expression, gaze, tone of voice, appearance and amount, rate and fluency of speech. It is with these aspects here collectively referred to as nonverbal aspects of human communicational behavior, that this review<sup>1</sup> will be concerned. The aim of this paper is to give a brief recapitulation of: A) sources of *contemporary interest in nonverbal communication*, B) *main research areas*, C) *main methodological principles*, D) *variety of research strategies and techniques*. The review will refer to several books and papers, both key works on the subject and accidental, often obscure sources. It is intended as a general introduction, or better still, an annotated bibliography of works on the problems which are rapidly becoming of central interest in the social as well as the biological sciences of Man.

A. The contemporary interest in problems classified today as studies in human nonverbal behavior and communication are of many years' standing and have a number of roots. Such problems as "expressive movements"<sup>2</sup>, "symbolic movements"<sup>3</sup>, "bodily expression"<sup>4</sup>, "gestural behavior"<sup>5</sup> or "language of gestures"<sup>6</sup> have been within the scope of in-

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<sup>2</sup> G. W. Allport, P. E. Vernon, *Studies in expressive movement*, New York 1933.

<sup>3</sup> M. H. Krout, *Autistic gestures: an experimental study in symbolic movement*, „Psychological Monographs”, no 208: 1935.

<sup>4</sup> W. M. Blake, *A preliminary study of the interpretation of bodily expression*, New York 1933.

<sup>5</sup> D. Efron, J. P. Foley, *Gestural behavior and the social setting*, [in:] T. M. Newcomb, E. L. Hartley, *Readings in Social Psychology*, New York 1947.

<sup>6</sup> G. Cochiara, *Il linguaggio del gesto*, Turin 1932.

terest of several scientific disciplines. Every discipline has been concerned with different research problems, used different techniques of collection and analysis of data, and the theoretical constructions have been created for different purposes. For these reasons the variety of theoretical and methodological profiles of studies in human communicational behavior is not the mere result of a process of differentiation and specification of scientific interests, but can be regarded as the outcome of the fusion of originally different and separate approaches, such as:

Anthropology, history of culture, history of art — where interest has been focused on symbolism of bodily rituals<sup>7</sup>, sign languages<sup>8</sup>, expression of social relations<sup>9–11</sup>, or interpretation of visual art<sup>12</sup> and music<sup>13</sup>.

Within the interest of linguistics lie problems of speech replacing signs and gestures<sup>14</sup>, speech accompanying behavior<sup>15</sup>, sign languages<sup>16</sup>, vocal and nonvocal aspects of speech communication<sup>17</sup>, gestural origins of language<sup>18</sup>.

The subjects of interest to psychology and psychiatry are problems of interpersonal perception<sup>19</sup>, expression of personality traits<sup>20</sup>, expres-

<sup>7</sup> W. Tegg, *Meetings and greetings: the salutations, obeisances, and courtesies of nations*, London 1877.

<sup>8</sup> M. L. Scott, *The sign language of the Plains Indians of North America*, „Archives of The International Folk-lore Association”, vol 1: 1893. S. E. Loomis, *Sign Language of truck drivers*, „Western Folklore”, vol 5: 1956.

<sup>9</sup> M. Kuttikrishna, *Hand symbols in Kathakali*, „Modern Review”, June 1937.

<sup>10</sup> R. Firth, *Verbal and bodily rituals of greeting and parting*, [in:] J. S. La Fontaine, *Interpretation of ritual: essays in honour of A. I. Richards*, London 1972.

<sup>11</sup> R. Brilliant, *Gesture and rank in Roman art: the use of gestures to denote status in Roman sculpture and coinage*, New Haven 1963.

<sup>12</sup> E. Saxl, *Die Ausdruckgebärde der Bildenden Kunst*, Jena 1932.

<sup>13</sup> A. P. Merriam, *Music as symbolic behavior*, [in:] H. A. Bosamjian, *The rhetoric of nonverbal communication: readings*, Glenview 1971.

<sup>14</sup> R. Jakobson, *Motor signs for „Yes” and „No”*, „Language in Society”, vol 1: 1972.

<sup>15</sup> A. T. Dittmann, L. G. Llewellyn, *Body movement and speech rhythm in social conversation*, „Journal of Personality and Social Psychology”, 11: 1969.

<sup>16</sup> „Sign Language Studies”, a semiannual journal edited by W. C. Stokoe, The Hague: Mouton.

<sup>17</sup> D. Abercrombie, *Paralanguage*, „British Journal of Disorders of Communication”, vol. 3: 1968.

<sup>18</sup> A. Johansson, *The gestural origin of language*, „Nature”, vol. 166: 1950. G. W. Hewes, *Primate communication and the gestural origin of language*, „Current Anthropology”, vol. 14: 1973.

<sup>19</sup> M. Cook, *Interpersonal perception*, Hardmondsworth 1971.

<sup>20</sup> Ch. Wolff, *A psychology of gestures*, London 1945.

sion of emotional and psychophysical states<sup>21</sup>, psychodiagnosis<sup>22</sup>, dyadic interaction<sup>23</sup>, therapeutic communication<sup>24</sup>, as well as selfpresentation<sup>25</sup>.

Studies in human communication theory are concerned mainly with problems of signals, codes, and channels used by human beings, as well as with problems of environmental variables influencing the process of exchanging signals<sup>26</sup>.

Finally these issues are of importance to pediatrics<sup>27</sup>, pedagogics<sup>28</sup>, non-human primate ethology<sup>29</sup>, human ethology<sup>30</sup>, and zoosemiotics<sup>31</sup>. And obviously these issues have been considered by theoreticians and practitioners of oratory<sup>32</sup>, theatre and dance<sup>33</sup> and pantomime<sup>34</sup>.

In such a variety of studies expressed by the vast range of technical literature the growing demand for a synthetic evaluation of research problems and findings is partially satisfied. And thus for the general discussion of theoretical aspects of studies in human one can list several important works<sup>35</sup>.

<sup>21</sup> F. Dunbar, *Emotions and bodily changes: a survey of literature on psychosomatic interrelationships 1910-1953*, New York 1954.

<sup>22</sup> E. Myra y Lopez, *Myokinetic psychodiagnosis*, New York 1958.

<sup>23</sup> M. Argyle, J. Dean, *Eye contact, distance, and affiliation*, „Sociometry”, vol. 28: 1965. M. Cook, *Experiments on orientation and proxemics*, „Human Relations”, vol. 23: 1970.

<sup>24</sup> L. J. Fine, *Nonverbal aspects of psychodrama*, [in:] J. H. Masserman, J. L. Moreno, *Progress in psychotherapy*, vol. IV. New York 1959.

<sup>25</sup> J. C. Flugel, *The psychology of clothes*, London 1940.

<sup>26</sup> G. A. Borden, *An introduction to human—communication theory*, Dubuque 1971.

<sup>27</sup> K. S. Robson, *The role of eye—to-eye contact in maternal-infant attachment*, „Journal of Child Psychology and Psychiatry”, vol. 8: 1967.

<sup>28</sup> J. R. Green, *A gesture inventory for the teaching of Spanish*, Philadelphia 1968.

<sup>29</sup> S. A. Altman, *The structure of primate social communication*, [in:] S. A. Altman, ed., *Social communication among primates*, Chicago — London 1967.

<sup>30</sup> I. Eibl-Eibesfeldt, *Transcultural patterns of ritualized contact behavior*, [in:] A. H. Esser, *Behavior and environment: the use of space by animals and men*, New York 1971.

<sup>31</sup> T. A. Sebeok, ed., *Animal communication: techniques of study and results of research*, Bloomington — London 1968.

<sup>32</sup> J. P. MacLaurin, *Self-education in gesture for public speaking*, Glasgow 1910.

<sup>33</sup> A. Morgan, *An hour with Delsatre: a study of expression*, Boston 1889.

<sup>34</sup> F. A. F. Adams, *Gesture and pantomime action*, New York 1891.

<sup>35</sup> P. Ekman, W. V. Friesen, *The repertoire of nonverbal behavior: categories, origins, usage and coding*, „Semiotica”, vol. 1: 1969. M. Argyle, *Social Interaction*, Atherton 1969. M. Argyle, *The psychology of interpersonal behaviour*, Harmondsworth 1972. M. Argyle, *Nonverbal communication in human*

If we are concerned with works summarizing different trends and aspects of these studies, beside the excellent paper by Duncan<sup>36</sup>, the most valuable are reviews for ecology of human interactions<sup>37</sup>, facial expression<sup>38</sup>, interpersonal perception<sup>39</sup>, facial-visual signals<sup>40</sup>, extra-linguistic vocal behavior<sup>41</sup>, and for the area of ethological approach to human communication<sup>42</sup>.

Finally there are several bibliographies<sup>43</sup> and more popular reviews<sup>44</sup>. There are also several useful selections of readings<sup>45</sup>.

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*social interaction*, [in:] R. A. Hinde, ed., *Non-verbal communication*, Cambridge 1972. A. Kendon, *The review of R. Birdwhistell's book: Kinesics and Context*, „American Journal of Psychology”, vol. 85: 1972. A. E. Schefflen, *How behavior means*, New York 1973.

<sup>36</sup> S. Duncan, *Nonverbal communication*, „Psychological Bulletin”, vol. 72: 1969.

<sup>37</sup> I. Altman, E. Lett, *The ecology of interpersonal relationships: a classification system and conceptual model*, [in:] J. E. McGrath, ed., *Social and psychological factors in stress*, 1967. R. Sommer, *Small group ecology*, „Psychological Bulletin”, vol. 67: 1967.

<sup>38</sup> P. Ekman, V. W. Friesen, P. Ellsworth, *Emotion in the human face: guideline for research and integration of findings*, New York 1972. P. Ekman, ed., *Darwin and facial expression: a century of research in review*, New York 1973.

<sup>39</sup> M. Cook, *Interpersonal perception*, Hardmondsworth 1971.

<sup>40</sup> I. Vine, *Communication by facial-visual signals*, [in:] J. H. Crook, ed. *Social Behavior in birds and mammals: essays on the social ethology of animals and Man*, London — New York 1970.

<sup>41</sup> G. F. Mahl, G. Schulze, *Psychological research in the extra-linguistic area*, [in:] T. A. Sebeok, et al., eds., *Approaches to semiotics*, The Hague 1964.

<sup>42</sup> Ch. R. Brannigan, D. A. Humphries, *Human non-verbal behaviour: a means of communication*, [in:] N. Blurton Jones, ed., *Ethological studies of child behaviour*, Cambridge 1972.

<sup>43</sup> T. M. Ciolek, *Human communicational behavior — a provisional checklist*, „Sign Language Studies”, no. 5: 1974. M. Davis, *Understanding body movement: an annotated bibliography*, New York 1972. F. C. Hayes, *Gestures: a working bibliography*, „Southern Folklore Quarterly”, vol. 21: 1957. M. Lurker, *Bibliographie zur Symbolkunde*, Baden-Baden 1968. T. Pfeiffer, *Some references to the study of human ethology*, Mimeographed. Dept. of Anthropology, Livingston College, New Brunswick, New Jersey, 1971.

<sup>44</sup> L. L. Barker, N. B. Collins, *Nonverbal and kinesic research*, [in:] P. Emmert, W. D. Brooks, eds., *Methods of research in communication*, Boston 1970. D. C. Barnlund, *Nonverbal interaction: introduction*, [in:] D. C. Barnlund, ed., *Interpersonal communication: survey and studies*, Boston 1968. H. J. Vetter, *Language behavior and communication: an introduction*, Itasca 1969.

<sup>45</sup> M. Argyle, ed., *Social encounters: readings in social interaction*, Hardmondsworth 1973. H. A. Bosmajian, ed., *The rhetoric of nonverbal communication: readings*, Glenview 1971. J. Laver, S. Hutcheson, *Communication in face to face interactions: selected readings*, Hardmondsworth 1972.

B. There exist three fundamental groups of studies concerned with the three basic functions of nonverbal behaviors in face-to-face interactions. The first group of work consists of researches on *the speech-replacing function*. There are several reasons for which verbal communication (based on written or spoken language) is subject to replacement by "sign languages" <sup>46</sup> and "technical codes". Besides the deaf and mute sign systems, and some social taboos such as in the case Trappist monks <sup>47</sup>, quite complex systems of gestural and postural signs are used for solving the problem of:

- differences in spoken languages used by individuals involved in the act of communication (i. e. American Indians, drivers, traffic police, international ground-air rescue signals)
- noise precluding any efficient use of speech (drivers, hitchhikers, firemen)
- distance which is too great for effective voice use (international ground-air signals, crane-operators, firemen, umpires)
- silence which for any specific reason should not be disturbed (surgeons, hunters, conductors & choirmasters, in gambling casions)
- barriers or external conditions making the use of verbal communication impossible (radio & television gestures, divers)
- secrecy: both of message itself and of the fact of communication (gambling casinos, burglars, secret associations, prisoners).

The second group of studies is concerned with *the role of nonverbal signals in the process of supporting, completing, regulating the verbal communication*. These studies are devoted to the analysis of the temporal sequence or coincidence <sup>48</sup>, of the verbal and nonverbal behaviors as well as to the analysis of interrelationships between meanings conveyed by each of the channels <sup>49</sup>. The various types of elements of visual and acoustic behavior have important functions:

- they complete the meaning (repeat, illustrate, accent, anticipate, contradict) of spoken utterances
- they control the synchronization of actions in conversation <sup>50</sup>

<sup>46</sup> T. Brun, *The international dictionary of sign language*, London 1969.  
T. M. Ciołek, *Materiały do alchemii gestów*, „Etnografia Polska”, vol. 17: 1973.

<sup>47</sup> M. Critchley, *The language of gesture*, London 1939.

<sup>48</sup> W. S. Condon, W. D. Ogston, *Sound film analysis of normal and pathological behavior patterns*, „Journal of Nervous and Mental Disease”, vol. 143: 1966.

<sup>49</sup> M. Argyle, et. al. *The communication of inferior and superior attitudes by verbal and non—verbal signals*, „British Journal of Social and Clinical Psychology”, vol. 9: 1970.

<sup>50</sup> S. Duncan, *Some signals as rules for taking speaking turns in conversations*, „Journal of Personality and Social Psychology”, vol. 23: 1972. A. Ken-

- they provide feedback to the speaker on the reaction of the audience
- they signal to the speaker about the attentiveness of a listener.

The third group of studies, the most interesting from the point of view of anthropological sciences, is concerned with the researches on *nonverbal behavior in managing the immediate social situation*<sup>51</sup>. These studies deal with the general question: What behavioral elements, in what sort of configurations and in what contexts, are in use for the purpose of:

- control of the content, emotional tone and length of interactions
- control of dimensions (role-relation, intimacy, dominance) of relationship
- co-ordination of activities and sequences of behavior
- signalling responsiveness and attentiveness.

C. The fundamental and rapid progress of knowledge in the field of human communicational behavior is associated<sup>52</sup> with the incorporation into the body of social sciences *the principle of the study of the detailed process of specific interactions at the level of the elements of these interactions*. Undoubtedly, highly influential here have been some methodological postulates worked out in biological sciences, especially by human ethology. Particulary important seem to be<sup>53</sup> three requirements:

- emphasis on the use of the large variety of simple observable features of behavior as raw data
- emphasis on the development of the descriptive and hypothesis-generating phase as the starting point of study
- an avoidance of major categories of behavior whose reality or operational definition have not been made clear enough.

The acceptance of these methodological principles appears to be in congruence with the inner trend of systematis studies in functions of body motion, paralanguage and proximation. These studies were brought into existence by constructing and developing systems of identification and notation for elements of vocal<sup>54</sup> and non-acoustic beha-

don, *Some functions of gaze direction in social interaction*, „Acta Psychologica” vol. 26: 1967.

<sup>51</sup> M. Argyle, *Social Interaction*, Atherton 1969.

<sup>52</sup> M. Argyle, ed., *Social encounters: readings in social interaction*, Harmondsworth 1973.

<sup>53</sup> N. Blurton Jones, *Characteristics of ethological studies of human behaviour*, [in:] N. Blurton Jones, ed., *Ethological studies of child behaviour*, Cambridge 1972.

<sup>54</sup> G. L. Trager, *Paralanguage: a first approximation*, „Studies in Linguistics”, vol. 13: 1958. D. Crystal, R. Quirk, *Systems of prosodic and para-linguistic features in English*, The Hague 1964.

vior<sup>55</sup>. At the same time the full usage of human ethology's research techniques, as well as its findings, seems to safeguard the progress in social sciences.

The second stimulating factor was the incorporation into social sciences of the idea of *extensively relating findings from the sphere of human behavior to their biological basis as well as to their interactional, physical, social, psychological and cultural context*. In accordance with this trend several studies have been made, mainly within the framework of researches in social psychology, on the influence of some antecedent and contextual factors on ongoing social interaction. Generally speaking several types of researches can be distinguished concerned with such problems as:

- the influence of the purpose of encounter on the outcome of interaction<sup>56</sup>
- the influence of physical and physiological factors encompassing both the momentary<sup>57</sup> and relatively enduring states of individuals involved in interaction. Some factors like body build<sup>58</sup>, physical stigma<sup>59</sup>, pupil dilation<sup>60</sup> can be of great importance for the final result of an encounter
- the influence of personal (demographic, psychological, sociocultural) characteristics. Some of them like appearance<sup>61</sup>, sex, age<sup>62</sup>, ethnic back-

<sup>55</sup> R. Birdwhistell, *Introduction to kinesics*, Louisville 1952. R. Birdwhistell, *Kinesics and context: essays on body motion communication*, Philadelphia 1970. T. E. Hall, *A system for the notation of proxemic behavior*, „American Anthropologist”, vol. 65: 1963.

<sup>56</sup> M. Cook, *Experiments on orientation and proxemics*, „Human Relations”, vol. 23: 1970. R. Sommer, *Further studies in small group ecology*, „Sociometry”, vol. 28: 1965.

<sup>57</sup> G. McBride, et al., *Social proximity effects on galvanic skin responses in adult humans*, „Journal of Psychology”, vol. 61: 1965.

<sup>58</sup> K. T. Strongman, C. J. Hart, *Stereotyped reactions to body build*, „Psychological Report”, vol. 23: 1968.

<sup>59</sup> E. Goffman, *Stigma: notes on the management of spoiled identity*, Englewood Cliffs 1963. R. Kleck, *Physical stigma and nonverbal cues emitted in the face to face interactions*, „Human Relations”, vol. 21: 1968.

<sup>60</sup> J. W. Stass, F. N. Willis, *Eye contact, pupil dilation and personal preference*, „Psychonomic Science”, vol. 7: 1967.

<sup>61</sup> M. Argyle, R. McHenry, *Do spectacles really affect judgments of intelligence?*, „British Journal of Social and Clinical Psychology”, vol. 10: 1970. W. J. McKeachie, *Lipstick as a determiner of first impressions of personality*, „Journal of Social Psychology”, vol. 36: 1952.

<sup>62</sup> G. Nielsen, *Studies in self-confrontation, viewing of sound motion picture of self and another person in a stressful dyadic situation*, Copenhagen 1962. L. A. Pastalan, D. H. Carson, eds., *Spatial behavior of older people*, Ann Arbor 1970.

ground<sup>63</sup>, psychological disturbances<sup>64</sup> have been found to be important differences<sup>65</sup>, emotional tone of interaction<sup>66</sup>, role and status relationships<sup>67</sup>, value congruence<sup>68</sup> have also been pointed out — the influence of environmental factors which encompass the set of events have been subject to detailed studies. The representative studies here are those on the influence of landscape and architecture<sup>69</sup>, living arrangement<sup>70</sup>, room design<sup>71</sup>, seating arrangements<sup>72</sup>, degree of crowding<sup>73</sup>, interpersonal distances<sup>74</sup>.

D. Within nonverbal communication studies exists a great variety of research techniques. The main differences can be recapitulated as follows:

The first is developed around the question: which aspect of human behavior is regarded as the main field of interest. Thus some studies can be devoted to the behavior of that individual, who in the course of

<sup>63</sup> J. R. Aiello, S. E. Jones, *Field study of the proxemic behavior of young school children in three subcultural groups*, „Journal of Personality and Social Psychology”, vol. 19: 1971. O. M. Watson, T. D. Graves, *Quantitative research in proxemic behavior*, „American Anthropologist” vol. 68: 1966.

<sup>64</sup> C. Hutt, C. Ounnstead, *The biological significance of gaze aversion with particular reference to the syndrome of infantile autism*, „Behavioral Science”, vol. 11: 1966.

<sup>65</sup> R. Firth, *Postures and gestures of respect*, [in:] P. Maranda, J. Pouillon, eds., *Exchange et communications: Melanges Levi-Strauss*, The Hague 1969.

<sup>66</sup> R. V. Exline, L. C. Winters, *Affective relations and mutual glances in dyads*, [in:] S. S. Tompkins, C. E. Izard, eds., *Affect. cognition and personality*, New York 1965.

<sup>67</sup> S. M. Jourard, *An exploratory study body accessibility*, „British Journal of Social and Clinical Psychology”, vol. 5: 1966. D. F. Lott, R. Sommer, *Seating arrangements and status*, „Journal of Personality and Social Psychology”, vol. 7: 1967.

<sup>68</sup> K. B. Little, et. al., *Value congruence and interaction distances*, „Journal of Social Psychology”, vol. 79: 1968.

<sup>69</sup> H. Wright, R. Barker, *Midwest and its children*, Lawrence 1957.

<sup>70</sup> R. R. Blake, et. al., *Housing architecture and social interaction*, „Sociometry”, vol. 19: 1956.

<sup>71</sup> R. Sommer, *Small group ecology*, „Psychological Bulletin”, vol. 67: 1967.

<sup>72</sup> A. P. Hare, R. F. Bales, *Seating position and small-group interaction*, „Sociometry”, vol. 26: 1963.

<sup>73</sup> W. Griffitt, P. Veitch, *Hot and crowded: influences of population density on interpersonal affective behavior*, „Journal of Personality and Social Psychology”, vol. 17: 1971.

<sup>74</sup> M. Argyle, J. Dean, *Eye contact, distance, and affiliation*, „Sociometry”, vol. 28: 1965.

interaction is the "sender of a signal"<sup>75</sup>, other studies can focus their attention on the behavior of the "receiver of a signal"<sup>76</sup>, or studies can be concerned with the nature of the signal<sup>77</sup>. Finally as the main issue the interactional event itself with its structure and characteristics can be studied<sup>78</sup>.

The second type is based on the status chosen for the individuals studied. There are several possibilities: an individual (or group of them) can be totally unaware that the studies on their behavior are being carried out<sup>79</sup>, secondly subject(s) can be told generally but unspecifically that studies concerned with their behavior will be carried out<sup>80</sup>, finally subject(s) can be fully informed about the objectives and details of planned studies<sup>81</sup>.

The next variety is related to the way the raw data is collected. The collection can be based on field studies in natural settings, such as libraries, restaurants, shopping centers, nurseries, airports, parks<sup>82</sup>, or the data collection can be carried out with the aid of laboratory facilities<sup>83</sup>. In this case there are two possibilities: a) the analysed phenomena can be deliberately (artificially) elicited for the purpose of a given phase of research<sup>84</sup>, or b) they can be observed and recorded without interference by the researcher in their spontaneous occurrence<sup>85</sup>.

<sup>75</sup> I. Eibl-Eibesfeldt, *Transcultural patterns of ritualized contact behavior*, [in:] A. H. Esser, ed., *Behavior and environment: the use of space by animals and men*, New York 1971.

<sup>76</sup> A. T. Dittman, et. al., *Facial and bodily expression: a study of receptivity of emotional cues*, „Psychiatry”, vol. 28: 1965.

<sup>77</sup> N. Blurton Jones, *Criteria for use in describing facial expressions of children*, „Human Biology”, vol. 43: 1971.

<sup>78</sup> A. Kendon, A. Ferber, *A description of some human greetings*, [in:] R. P. Michael, J. H. Crook, eds., *Comparative Ecology and Behaviour of Primates*, London 1973.

<sup>79</sup> W. C. McGrew, *An ethological study of children's behaviour*, New York — London 1972; T. M. Ciolek, *Greeting and farewell behavior in Man: report on preliminary investigations*, Mimeographed, Dept. of Anthropology, RSPaCS, Australian National University, Canberra 1974.

<sup>80</sup> M. H. Krout, *An experimental attempt to produce unconscious manual symbolic movements*, „The Journal of General Psychology”, no 208: 1954.

<sup>81</sup> D. F. Thompson, L. Meltzer, *Communication of emotional intent by facial expressions*, „Journal of Abnormal and Social Psychology”, vol. 68: 1964.

<sup>82</sup> S. Heshka, Y. Nelson, *Interpersonal Speaking Distance as a Function of Age, Sex, and Relationship*, „Sociometry”, vol. 35: 1972.

<sup>83</sup> M. Argyle, R. Ingham, *Gaze, mutual gaze, and proximity*, „Semiotica”, vol. 6:1972.

<sup>84</sup> i. e. G. McBride et al., 1965.

<sup>85</sup> A. Kendon, *Movement coordination in social interaction: some examples described*, „Acta Psychologica” vol 32: 1970.

The fourth type of difference arises from the way the data is collected and recorded. Several techniques can be employed separately or simultaneously: questionnaires<sup>86</sup>, observation and note-taking<sup>87</sup>; observation with the aid of detailed notation system<sup>88</sup>; observations with the aid of check-lists and videotape recorders<sup>89</sup>; taperecording comments on ongoing interactional events<sup>90</sup>; analysis of transcribed videotape<sup>91</sup> as well as the frame by frame analysis of a research document film<sup>92</sup>.

Finally the fifth category is connected with methods of data analysis. And thus conclusions can be drawn in many ways: on the basis of structural, contextual analysis<sup>93</sup>; on the basis of statistical treatment of numeric data<sup>94</sup>; or even due to computer processing<sup>95</sup>.

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<sup>86</sup> i. e. S. M. Jourard 1966.

<sup>87</sup> i. e. R. Firth 1969.

<sup>88</sup> O. M. Watson, *Proxemic behavior: a cross-cultural study*, The Hague 1970.

<sup>89</sup> i. e. W. C. McGrew 1972.

<sup>90</sup> i. e. W. C. McGrew 1972.

<sup>91</sup> i. e. S. Duncan 1972.

<sup>92</sup> i. e. A. Kendon, A. Ferber 1973.

<sup>93</sup> A. E. Schefflen, *Natural History Method in Psychotherapy: communicational research*, [in:] L. A. Gottschalk, A. H. Auerbach, *Methods of Research in Psychotherapy*, New York 1966.

<sup>94</sup> M. H. Krout, *An experimental attempt to determine the significance of unconscious manual movements*, „The Journal of General Psychology”, vol. 51: 1954.

<sup>95</sup> P. Ekman, W. V. Friesen, T. Taussig, VID-R and SCAN: tools and methods for automated analysis of visual records, [in:] G. Gerbner, et. al., *The analysis of communication content*, New York 1969.