CONFUSION OR DUALITY – CHANCES OF MEASU
THE PHENOMENON IN STUDIES ON TEACHI

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The issue of confusion and ambivalence is a constant part of the landscape of the teaching profession. This applies to the specific nature of the teaching role and attitudes towards elements of the education system. For this reason, the possibility to measure this phenomenon for the purposes of diagnosis and prognosis seems to be significant. Frequent associations with pathology hinder perception of the bright sides of the phenomenon. Possibility of measurement allows to analyze relationships the ambivalence with other features providing an opportunity to verify hackneyed associations.

1 Introduction

The issue of confusion has raised interest mostly among mental health researchers. This was expressed at the beginning of the twentieth century by Swiss psychiatrist BLEUER, who introduced the term ambivalence to describe the basic symptom of schizophrenia. The term was later used by Freud (Laplanche & Pontalis 2006) to describe the simultaneous presence of contrary emotions or attitudes towards the same object. These circumstances resulted in the association of ambivalence mainly with pathological processes. Later Kurt LEWIN (1935) described the mechanism behind the occurrence of motivational conflicts, which are caused by mutually exclusive aspirations or conflicting values. The significance of ambivalence was also appreciated by attachment researchers, who indicated the possibility of coexistence between the desire for closeness and the need of its avoidance (Ainsworth, Bowlby 1989). However, it was Robert MERTON's work (1976) which eventually showed the multidimensional character of ambivalence, allowing the appreciation of this category in describing the characteristics of social structure and the individual's social situation.

According to MERTON (1976), sociological ambivalence implies conflict-

ing normative expectations inscribed in an individual's role or social status (p. 6). This constitutes a source of psychological ambivalence. After all, people experience contradictory emotions, convictions, and behaviours, connected with holding particular social positions or specific functions. These positions and functions often involve contradictory expectations, norms, and counter-norms, conflicts of interests and values (p. 9). Thus, it is social structure which generates the conditions for both types of ambivalence to arise. The author stressed the assumption that the structure of social roles consists of a system of equivalent norms and counter-norms. This system was developed in order to insure the possibility of flexible crossing between normatively acceptable behaviours. MERTON stated that it is necessary in order to avoid changes in the level of social relations, in which individuals who perform their roles remain (p. 31). Only then can roles be effectively carried out (p. 19).

Thus, we deal with ambivalence in every social and psychological situation, in which there occurs a dichotomy, polarisation, and oscillation between the poles of a continuum. To identify ambivalence with confusion would be an over-simplification. What is more, it cannot be identified with pathology or a state requiring reduction. First of all, as pointed out by Merton, it constitutes a feature of social structure. Secondly, there exist desired phenomena and processes in which ambivalence plays a key role. This is the case with creativity, the basic element of which is tolerance of ambiguity (see also Zenasni, Besancon, & Lubart 2008).

2 Confusion Or Duality?

A proper perspective to define ambivalence allows us to notice not confusion, but duality. Dichotomising phenomena and describing them in categories of opposing pairs makes it difficult to see the processuality of the observed issues or their dialectic character. However, if we treat each part in a pair of opposites as coexisting, rather than excluding, we will see the complementarity and multidimensionality of the phenomenon. At that point ambivalence itself can be set in a continuum model.

The category of ambivalence, as understood by MERTON, is extremely useful for the description of the specific character of the work of teachers

and educators. These roles have contradictory expectations inscribed in them. They are a result of the functions and tasks which are associated with them, and the position which a person carrying out a given role must assume in the structural dependency system. What is more, the situation of teachers is itself ambivalent. On the one hand, it is connected with commitment and readiness to act effectively and, on the other, with the experience of rejection, distance, and uncertainty connected with the reaction of the environment, the school, and its clients (Kwiatkowska 1997, p. 132). This is conducive to conflicting evaluation and ambivalent impressions. It is all the more certain if a person wants to carry out the role of teacher. This role requires involvement and long-term interpersonal relations, taking place in varying circumstances. Furthermore, educational institutions are governed by institutional laws, in which conflicts of interests between the individual and the organization are rooted. However, how do we diagnose the intensity of ambivalent experiences among individual teachers and educators?

3 Ambivalent Attitudes

The search for solutions leads into the area of attitude measurement. Modern attitude theory has worked out models illustrating the ambiguity of attitudes towards the same object, and providing insight into the dynamics according to which this ambiguity is shaped. We could mention here the model of dual attitudes (Wilson, Lindsey, Schooler 2000) and the model of implicit attitudes (Greenwald & Banaji 1995). Moreover, the issue of individual ambivalence, expressed by teachers through contradictory evaluation of phenomena and objects associated with education and school, can be easily operationalized using the term attitude (see also: Pasikowski 2014).

The issue of attitude ambivalence essentially concerns the question of the attitude sign. We speak of ambivalence when the same object is evaluated positively and negatively at the same time (Dormandy, Hankins, Marteau 2006). Analysis of the history of attitude research shows that for a long time the common belief was that the attitude sign is a bipolar characteristic (Böhner, Wänke 2002) i.e., it assumes values from a bipolar

continuum of positive vs. negative. However, BERNTSON (1997) suggested a multidimensional approach, demonstrating that each attitude sign is a separate continuum. This meant that the vast majority of attitudes is characterised by the coexistence of the intensity of positiveness and negativeness. This way the interpretational dilemma of the centre of the continuum was eliminated. The bipolar approach made it difficult to determine whether it implies a neutral or an ambivalent attitude.

4 Attitude Ambivalence Measurement

There are two basic approaches to study and describe attitude ambivalence: operative and meta-judgmental (Bassili 1996; Priester, Petty 2001). The first approach consists in estimating positive and negative tendencies on separate scales, and referring the results to a mathematical model (formula of ambivalence). The meta-judgmental approach is based on self-observation and self-description, and on interviews. However, in the face of arguments for the occurring lack of consciousness of contradictory attitudes (Petty et al. 2006; Ullrich, Schermelleh-Engel, Böttcher 2008) it is difficult to depend solely on the accuracy of the respondents' self-description. The material gathered during interviews concerning attitude ambiguities is also largely mediated by the activity of additional factors (see also: Bassili 1996; Priester, Petty 2001).

Presently the most popular formula for calculating attitude ambivalence is the one suggested by THOMPSON and ZANNA (1995). Combined with a suitable measurement technique it allows us to determine the scale of ambivalence as a quotient of the sum and difference of contradictory evaluations.

Formula 1. The Thompson's and Zanna's formula.

Ambivalency of attitude $= (P+N)/2 - |P-N|$

"P" stands for the intensity of the positive tendency, and "N" stands for the intensity of the negative tendency. The sum describes the intensity of the attitude, and the absolute difference "|P−N|" describes its polarisation. With a constant intensity of both addends, the greater the difference be-

tween positive and negative evaluation (polarisation), the smaller the ambivalence.

However, sometimes this formula gives inaccurate values or creates difficulties for the interpretation of results. That is why I suggested to replace it with a formula without these disadvantages (Pasikowski 2014).

Formula 2. The corrected formula.

Ambivalency of attitude $= ((P+N)/2)((100/a)b)/max$

The significance of "P" and "N" is identical as in THOMPSON and ZAN-NA'S formula, "a" is the value of the tendency with a higher intensity, and "b" with a lower intensity. "max" signifies the maximum possible value on the scale used to measure both tendencies. Thus, theory and research justify treating attitudes as a conglomerate of contradictory evaluations. That is why it is interesting to see how this approach will work in measuring the states experienced by teachers as a result of experiences associated with school. The fundamental question which arises in this context is: Are there differences between the bipolar and the multidimensional measurement of teachers' (educators') attitudes towards school? In order to increase the quality of the measurement form comparison, the study included candidates for the teaching (educating) profession, i.e., students of pedagogy. Because of the place, and the circumstances of conducting the study on a group of teachers, there is a risk that the answers given by the teachers could be politically correct.

5 Method
5.1 Sample

The respondents were a group of 29 middle-school (gymnasium) teachers (including 22 women and 6 men; one person did not provide any information regarding gender) and 31 students of pedagogy (22 women and 9 men). The average age was 36 (sd=6.77, me=36) among teachers and 22 (sd=1.59, me=23) among students.

The study was preliminary, which is why random sampling was based on groups. In the case of teachers the sampling units were middle-schools in the area of Słupsk. In the case of students the sampling units were class

groups placed on the weekly timetable of the Pomeranian University in Słupsk. One-stage cluster random sampling is limited, therefore the possibility of result generalisation is also limited. Moreover, the results cannot be generalised outside the population described above.

5.2 Tools
5.2.1 The Attitude Scale

The scale of attitudes towards the school social subsystems was used in the measurement. Five subsystems were distinguished i.e., teachers, pupils, parents, head masters, administrative staff. The respondents were asked to determine the degree in which particular subsystems evoke positive or negative thoughts and sensations in them. That is why two separate linear scales were to be used for each subsystem. Respondents answered by marking a point on a 10 cm line segment. The left pole of the scale was marked as "0", the right pole as "max". The marks were measured with millimetre accuracy. Half of the attitude Scales began with, measuring positive attitudes towards subsystems, whereas the rest began with measuring negative attitudes. These were randomly distributed to the groups of students and teachers. Eventually half of the students and half of the teachers were distributed Attitude Scales which began differently. The purpose of this was to control the order of presenting questions, so as to minimise the possible influence of this order on the achieved measurement results.

5.2.1 Distance Scale

The tool for the bipolar measurement of the attitude dimension. Spatial distance is perceived as one of the best measures of attitude towards an object (Cacioppo, Gardner, & Berntson 1999; Fila-Jankowska & Jankowski 2008; Vallacher, Nowak, & Kaufman 1994). It is connected with psychological distance, which is why this type of measurement is also used in studies on identification (Mashek, Cannaday, & Tangney 2007; Schubert & Otten 2002).

The attitude towards an object, expressed through the distance of the po-

sition assumed with respect to the object, is based on a physiological mechanism of approach-avoidance (Fila-Jankowska, Jankowski 2008). Assuming a specific position regarding an object is largely automated. It consists in approaching objects that bring pleasure and distancing oneself from those evoking negative emotions.

Respondents were asked to estimate the distance which bests expresses their attitude towards each of the 5 distinguished school subsystems. The length of the linear scale was 10 cm. The left pole was described using the subsystem name. The name was written above the line. The term "min" was written below the line. The right pole was described using the term "max".

In validity studies (Pasikowski 2014) internal consistency measured using Cronbach's α coefficient equalled 0.92. All positions were included into one factor, and in factor analysis using the principle components analysis with a Varimax rotation factor loadings equalled over 0.81. The distance scale explained 75 % of result variance.

5.3 Procedure

Attitude measurement in the student group took place during their scheduled academic classes. The measurement in the teacher group took place during a teaching staff meeting. Each respondent received a Distance Scale and an Attitude Scale, filling them in that order. Participation was anonymous and voluntary. No respondent refused to take part.

The collected empirical data was compared with regard to the type of measurement, separately in the student group and separately in the teacher group. Next, an intergroup comparison was performed, with each type of measurement compared separately. Finally, attitude ambivalence coefficients were compared in the student group and in the teacher group. The attitude ambivalence coefficient was calculated on the basis of the author's formula presented earlier, to which the values of the Attitude Scale were substituted.

Apart from the bipolar attitude measurement and multidimensional measurement, the averaged value of the positive and negative attitude measurement was also included. This was done mainly in order to control the

possible effect, predicted by the assumption that attitude, judgment, and notion constitute an averaged value of the current experiences connected with a given object (Posner & Keele 1970).

6 Results and Discussion

First it needs to be emphasised that due to the conditions of sample selection any attempts at extrapolation of the obtained analysis results need to be very cautious.

In the student group intra-group comparison (Tab. 1) showed significant differences between the results of bipolar measurement and those of multidimensional measurement: Only the results for positive attitude intensity did not differ significantly from the results of bipolar attitude measurement, regarding the head teachers (H) and administrative staff (A) subsystems. Perhaps this results from the generally smaller number of experiences and connections in carrying out daily obligations, with the representatives of these subsystems. This, in turn, would translate into a smaller number of opportunities to experience diverse sensations. On the other hand, in areas where we can suspect that the number of experiences fosters experiencing contradictory attitudes, bipolar measurement produced results which were more in line with social expectations, which were politically correct or coherent with the generalised idea of one's attitude.

It was also observed that similarity existed between the bipolar measurement results and the results of averaging of positive and negative attitudes towards the head teacher (H) subsystem, which can confirm the assumption, that sometimes bipolar measurement results are a consequence of the averaging of tendencies towards the object of attitude. In the case of attitude towards the administrative staff (A) subsystem, there occurred a difference in the intensity of positive and negative attitudes. This, in turn, can be evidence of the superiority of the multidimensional measurement over the bipolar one. This is because such nuances are impossible to capture in bipolar measurements. In the teacher group intergroup comparison (Tab. 1) indicated significant differences between the results of bipolar and multidimensional measurements.

Table 1. Results of intra-group comparisons of attitude measurement forms.

GROUP	SUBSYSTEM	MEASUREMENT								$\text{Friedman } chi^2_{(df=3)}$	p (2-tailed)	post hoc²
		positive (a)		negative (b)		average (c)		distance (d)				
		m	sd	m	sd	m	sd	m	sd			
STUDENTS	Teachers	44,87	24,56	43,48	25,12	44,18	9,211	67,77	24,31	19,19	0,0000	a-d***, b-d***, c-d***
	Pupils	54,35	27,3	36,94	29,87	45,65	8,584	80,23	19,60	39,12	0,0000	a-d****, b-d****, c-d****
	Parents	48,45	28,13	30,81	24,29	39,63	13,75	67,26	28,33	27,52	0,0000	a-d*, b-d****, c-d***
	Headmasters	45,68	27,23	40,55	30,15	43,11	15,38	57,68	30,41	10,57	0,0143	b-d**
	Administrat.	53,74	30,7	30,61	32,96	42,18	14,84	64,06	28,60	23,53	0,0000	a-b***, b-d****, c-d*
TEACHERS	Teachers	54,34	27,41	40,83	26,04	47,59	6,64	91,93	14,28	44,60	0,0000	a-d****, b-d****, c-d****
	Pupils	50,31	25,00	48,14	24,21	49,22	6,863	89,48	15,56	36,41	0,0000	a-d****, b-d****, c-d****
	Parents	51,48	25,37	41,03	24,16	46,26	11,54	75,34	33,19	19,26	0,0002	b-d****, c-d***
	Headmasters	55,48	31,11	41,00	30,23	48,24	8,738	88,31	17,82	29,33	0,0000	a-d***, b-d****, c-d***
	Administrat.	51,38	32,32	45,14	33,42	48,26	7,315	81,21	25,86	22,92	0,0000	a-d***, b-d****, c-d****

² Namenyi test   *p<0,05 **p<0,01 ***p<0,005 ****p<0,001

Only results for positive attitude intensity did not differ significantly from the results of bipolar attitude measurement, regarding the parent (P) subsystem. This result proves that a separate measurement of the positive and negative aspect of attitude provides information impossible to capture using bipolar measurement. An interesting effect was also produced by the intergroup comparison (Tab. 2).

Table 2. Results of intergroup comparison tests (Students vs. Teachers).

SUBSYSTEM	positive		negative		average		distance	
	$t_{(58)}$	$P_{(2-tailed)}$	$t_{(58)}$	$P_{(2-tailed)}$	$t_{(58)}$	$P_{(2-tailed)}$	$t_{(58)}$	$P_{(2-tailed)}$
Teachers	-1,41	0,1633	0,40	0,6890	-1,09ᶻ	0,2766	-4,73ᶻ	0,0000
Pupil	0,60	0,5527	-1,59	0,1174	-1,78	0,0810	-2,02	0,0483
Parents	-0,44	0,6635	-1,63	0,1076	-2,02	0,0485	-1,02	0,3133
Headmasters	-1,30	0,1983	-0,06	0,9540	-1,59ᶻ	0,1116	-4,54ᶻ	0,0000
Administrat.	0,29	0,7726	-1,69	0,0956	-2,07ᶻ	0,0380	-2,43	0,0182

ᶻ Z correct. U Mann-Whitney

Bipolar measurement results were significantly higher for teachers than for students. The only exception were the results concerning the attitude towards the parent subsystem. It should be interpreted that the first group showed much more positive attitudes. Analysis of positive and negative attitude measurement results indicated to the contrary. Attitudes were similar among students and teachers. Results of recalculations using the ambivalence formula showed that in this respect students and teachers were also similar. The average level of ambivalence towards individual subsystems ranged from 18-24. The highest level was to teachers subsystem (T). Only toward the administration (A) average was around 15. During the student's and teacher's results comparison none of the Student t-values for two-tailed probabilities did not exceed the critical value for significance level of 0.05.

A separate comment should be made concerning the comparison of averaged attitude measurement results. To a certain degree, and after a closer determination of the conditions, it could perhaps support the thesis concerning the evaluation of objects by averaging evaluations derived from the current experiences with that object. However, as results indicate,

averaged measurement is not the best equivalent of polar measurement. It also does not convey the relationship between separate measures of multidimensional measurement. It merely provides general insight into attitude intensity. Only by taking into account the connection between intensity and attitude polarisation can we gain insight into aspects which were impossible to observe using single-dimensional measurement.

In conclusion, theory and research indicate possibilities to gain insight into the phenomenon of confusion, in the area of experiences connected with carrying out the role of teacher and educator. This is in spite of the fears that respondents will have limited access to reporting states of confusion, internal conflicts, and ambivalence. However, this requires creating a theory describing such phenomena, conducting a thorough operationalization, and selecting suitable technical means. As shown by the results presented above, multidimensional measurement allows reaching those aspects of the phenomenon which are hidden from bipolar measurement. The presented method of attitude assessment could therefore encourage similar solutions in measuring motivation, interests, and identification. It could also be used to measure other features connected with functioning under conditions of ambiguity and mutual exclusion.

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