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AUTHOR Bastick, Tony
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ABSTRACT

An instrument called the Selected Phrase Empathic Ability Key (SPEAK) was developed to measure empathy. The simply scored projective measure was then validated against physiological measures of reactive empathy. The SPEAK followed the classical instruments and used emotionally neutral line drawings (clip art) as projective stimuli for assessing empathy. The measure presented 113 of these drawings using a balanced analysis of variance design to 48 subjects. The reviewed 29-item instrument was administered to 1,323 mathematics staff and students, aged 15 to 63 years, from 24 tertiary institutions in England. Varimax factor analysis of the empathy scores showed two types of empathy. However, correlations with all 16 personality factors of Cattell's 16 Personality Factor (16PF) instrument were very low, with only two correlations reaching significance. This suggests that both types of empathy processes are probably additions to the 16PF. (Contains 1 figure, 2 tables, and 15 references.) (SLD)

Personality Factors of Empathy

Author:
Tony Bastick

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Tony Bastick
University of the West Indies

Overview of the problem of modern measures of empathy and their inclusion in personality inventories

Introduction

The ability to experience empathy is an important personality process, both in interpersonal relationships and in the creative arts. Empathy Ability is considered by this study to be the ability of a person to allow an 'object' to evoke feelings that s/he imagines to correspond to the feelings of the object. When the object is another person, as in interpersonal relationships, we say that the subject 'can put themselves in the other person's shoes'. When the 'object' is literally an object or an idea, as in the creative arts, we say that the subject 'has a feeling for the object or idea'. The classical instruments for assessing empathy - for example, the Rorschach and TAT - are projective instruments that facilitate the regressive primary thought processes fundamental to this personality process. However, many current instruments for measuring this personality process rely on the format of self-rated agreements with a list of empathy descriptions. The secondary thought processes involved in responding to this may not facilitate the basic regressive primary thought necessary to this personality process.

For these reasons, this study followed the classical instruments and used emotional neutral line drawings (clip-art) as projective stimuli for assessing this ability.

Development of a simply scored projective measure of empathy validated against physiological measures of reactive empathy

113 low detail, emotionally neutral line drawings depicting objects and/ or people were pretested using a balanced ANOVA design (n=48). Subjects responded by writing what they would say in the situations depicted in the line drawings. The protocols were scored according to the number and type of first person pronouns written. Item-total correlations ($p<0.02$) were used to select the most consistent items. Because the researcher was particularly interested in the role of empathy in mathematical thought, the resulting 29 item instrument was then administered, with the 16PF, to a sample of 1,323 mathematics staff and students (aged 15-63 years) from 24 tertiary institutions in South East England. Varimax factor analysis of the empathy scores showed the existence of two types of empathy. However, the correlations with all 16 personality factors were very small with only two small correlations ($r=0.141$, $r=0.085$) reaching significance ($p<0.01$) because of the large sample. This indicated that both types of empathy processes were probably additional to the 16PF.

Background

Empathy is a complex multidimensional cognitive-affective-social macroprocess (Gordon, 1985) that is considered to be an important personality attribute (Klis & Kossewska, 1996). It is considered particularly important in areas of leadership and interpersonal communication (Gordon, 1985; Thomlison, 1990; Durand & Reister, 1985). Consequently many measures of empathy have been devised for the selection and training of personnel managers and supervisors, for social workers, doctors, nurses, counsellors, sales people, psychoanalysts, actors, teachers, diplomats, and other workers in areas of human interaction (Kalliopuska, 1992; Holm, 1996; Sullivan, 1989).

Secondary process format of modern measures of empathy

It is thought that self-report measures, Likert-type inventories, multiple choice scales and self-esteem questionnaires are appropriate formats for assessing empathy (Kalliopuska, 1989; Popham, 1994; Saarni, 1989). Standard scales which are based on these formats, such as the Hornblow scale, Hogan's empathy scale, the Carkhuff-Truax empathic understanding scale, and the Barrett-Lennard relationship inventory, are highly correlated (Jarski, 1985). This correlation is taken as evidence of their reliability in measuring empathy. However, it is not necessarily evidence of their validity in measuring empathy.

Primary process format of traditional measures of empathy

The operational definitions of empathy have changed considerably since the concept of 'Einfuhlung', meaning 'feeling together with', was first introduced by Lipps in 1890 and used to signify 'empathy' by Titchner in 1910 (Bastick, 1982). Up to the 1970's the measures most relevant to the concept of empathy were direct physiological measures (Lemineur & Meurice, 1972) and projective psychological instruments such as TAT, Rorschach and Feffer's Role Taking Task (RTT). Since the 1970's the operational definitions of empathy have tended to focus more on the assumed accurate assessment of another's feelings and be assessed by the 'pencil-and-paper' formats mentioned above.

Validity problem of assessing primary process ability using secondary process format

Broome (1991) argues that these definitions of 'empathy' are not useful and improperly portray empathy as an ability or skill. Similarly, Peterson and Gustavsen (1986) criticise the verbal and cognitive limitations on the measurement of empathy. It is a moot point whether the 'convenience' of these modern measures has been responsible for this change the meaning of 'empathy'. The older more encompassing concept was of empathy as a primary process that occurred in regressed states. Hence, the secondary processes necessary to modern assessment formats could be expected to interfere with the accurate measure of this traditional form of empathy. The validity of these modern instruments is thus put into question.

Development of the instrument

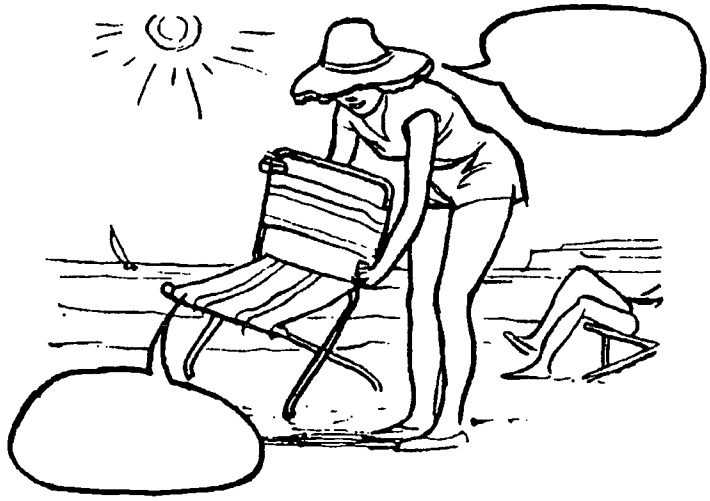
Rationale

These arguments raised concern that the secondary processes now commonly used to assess empathy, a primary process, would detract from the validity of the measures. So, personality instruments that should include empathy would not do so if they relied upon these secondary process measures. Hence, a simply scored projective instrument was developed to assess Empathic Ability: the Selected Phrase Empathic Ability Key (SPEAK).

Empathy definition and pretesting of design of the instrument

Empathic Ability was defined in the more traditionally inclusive manner as the ability to allow an 'object' to evoke feelings that are imagined to correspond to the feelings of the object. The 'object' can be another person, an idea or an actual inanimate object. 113 items of low emotional impact, like the one illustrated in figure 1, were used in a double replicated balanced two block ANOVA design (n=48). The effects tested included order of items, high v low detail, double v single items, categories of abstraction, and repetition of instructions. The instructions were to "Write what you would say in the situation shown". The Empathy Ability Key was calculated from the number of first person pronouns used. Unlike most projective instruments, this scoring required only recognition by the scorer, and so was expected to have 100% scorer reliability.

Scoring and 100% scorer reliability



Typical SPEAK item. Instructions are to "Write what you would say in the situation shown"

Figure 1: Typical SPEAK item

Reliability analysis was used to choose 29 items for a 15 - 20 minute test. This test had a reliability greater than 0.95 (Guttman Lambda 6 lower bound = 0.95198) .

Validating SPEAK against scores against physiological measures of empathy

The researcher was particularly interested in the role of Empathic Ability in mathematics and so the 29 item SPEAK test and Cattell's 16 Personality Factor instrument (16PF) was given to 1,323 mathematics students and faculty in 24 tertiary institutions in the South East of England. The median SPEAK score was 22. 50 subjects above the median and 50 subjects below the median of 22 were selected at random to validate the SPEAK scores against physiological measures of empathy. In a double blind experiment designed to ensure that emotional reactivity could only indicate preconscious empathic responses it was found that the physiological responses of subjects with a high Empathic Ability was significantly different from subjects with a low Empathic Ability ($p<0.001$) - see table 1. This finding was further checked by subsequent interviews with the subjects.

Table 1: Subjects with high and low SPEAK scores compared on their preconscious empathic physiological responses

Standardised physiological variables	High Empathic Ability Key >22		Low Empathic Ability Key <22		Significance of difference
	Mean	no.	Mean	no.	p
GSR Rate	0.011	43	0.183	44	0.000
GSR	0.436	43	0.807	42	0.000
Heart Rate	1.143	37	1.107	41	0.001

Results

The Empathic Ability Key was then correlated with each of the 16 Personality Factors. The results for 937 cases that had no missing data are shown in table 2.

Table 2: 16 Personality Factors correlated with SPEAK empathy scores (n=937)

Main results showing low correlations of 16PF with physiological reactive empathy

Factor	A	B	C	E	F	G *	H	I
Corr.	0.065	0.057	0.063	-0.048	-0.029	0.141	-0.069	0.045
Sig.	0.023	0.04	0.028	0.071	0.187	0.001	0.017	0.065
Factor	L	M	N	O *	Q1	Q2	Q3	Q4
Corr.	-0.046	-0.01	0.005	0.085	-0.061	-0.056	-0.012	0.074
Sig.	0.079	0.376	0.436	0.005	0.031	0.044	0.357	0.012

Only two* of the low correlations in table 2 are significant at $p<0.01$ and this was due to the large sample size of 937. The 16PF scores and the SPEAK scores were also varimax factored. The factor best representing Empathic Ability had exceedingly small contributions (loadings) from the 16 Personality Factors. The maximum loading was from Factor G at only 0.18439 which corresponds to the most significant correlation in table 2.

Conclusion

Traditional physiological reactive empathy is outside the domain assessed by the 16PF

Empathy is considered to be an aspect of personality. Empathy, as measured by SPEAK projective instrument, was validated by double-blind physiological experiments and interviews. Yet the low correlations of the 16 Personality Factors with SPEAK and their low loadings on the SPEAK factor when varimax factored, indicate that this more inclusive traditional concept of empathy is outside of the domain assessed by the 16PF.

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Signature:	Printed Name/Position/Title: Tony Bastick, Research Coordinator, Dr.	
Organization/Address: University of the West Indies, Department of Educational Studies, Mona Campus, Kingston 7, Jamaica	Telephone: (876)927-2130	FAX: (876)977-0482
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