

A Multidimensional Approach to Individual  
Differences in Empathy

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### Abstract

The development of a multidimensional individual difference measure of empathy is described. The final version of the instrument consists of four seven-item subscales, each of which taps a separate aspect of the global concept "empathy." One scale, the perspective-taking scale, contains items which assess spontaneous attempts to adopt the perspectives of other people and see things from their point of view. Items on the fantasy scale measure the tendency to identify with characters in movies, novels, plays and other fictional situations. The other two subscales explicitly tap respondents' chronic emotional reactions to the negative experiences of others. The empathic concern scale inquires about respondents' feelings of warmth, compassion, and concern for others, while the personal distress scale measures the personal feelings of anxiety and discomfort that result from observing another's negative experience. The factor structure underlying these scales is the same for both sexes, and emerged in two independent samples. Test-retest and internal reliabilities of all four scales were substantial. The pattern of sex differences and the intercorrelations of these four scales are discussed in terms of recent theoretical treatments of the development of empathy (Hoffman, 1976). It is concluded that the new measure has considerable potential for investigations of the multidimensional nature of empathy.

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For over 200 years, the notion of responsivity to the experiences of another has been discussed by social theorists, and from the beginning the multidimensional nature of this phenomenon has been recognized. Smith (1759), for instance, made the initial differentiation between instinctive sympathy (or empathy), which he described as a quick, involuntary, seemingly emotional reaction to the experiences of others, and intellectualized sympathy, or the ability to recognize the emotional experiences of others without any vicarious experiencing of that state. Spencer (1870), a hundred years later, drew the same distinction, and this instinctive/intellectual, or cognitive/emotional partitioning of empathy has continued to this day.

Research efforts since the turn of this century, moreover, have almost exclusively focused on either one or the other aspect of the empathic process. While the earliest treatments dealt primarily with the emotional side of the empathy coin -- devoted primarily to explaining how the "sharing" of emotions came about (McDougall, 1908; Lipps, 1926) -- the emphasis since then clearly has been on the more cognitive aspects of the phenomenon.

The writing of both Mead (1934) and Piaget (1932) contributed heavily to this shift. The appearance, at roughly the same time, of two influential cognitive approaches greatly affected the character of subsequent research efforts devoted to empathy. The large body of work concerned with "accuracy of perception" of others (e.g., Dymond, 1949; 1950) was an outgrowth of the cognitive orientation to empathy. Likewise, the attention given to the study of empathy within the counseling setting -- in which it is usually considered to be an experiencing of others' feelings "as if" they were your own -- assumes a clear cognitive, relatively non-emotional definition of empathy.

Recent years have seen an increased interest in emotional empathy, and concomitantly, increased movement towards an integration of these two research traditions. The belief appears to be growing that the cognitive and affective components of empathy comprise an interdependent system in which each influences the other, and which never can be fully understood as long as research efforts concentrate on one aspect to the relative exclusion of the other (Deutsch and Madle, 1975; Feshbach, 1976; Hoffman, 1977). Some evidence demonstrating the predictive superiority of considering both cognitive and emotional aspects of the empathy process is already available (e.g., Coke, Batson, & McDavis, 1978; Iannotti, 1979).

### Individual Difference Measures

In the face of the growing belief that empathy is a complex multidimensional concept, the qualities desirable in an individual difference measure of empathy become clearer. Such instruments should provide separate assessments of 1) the cognitive, perspective-taking capabilities or tendencies of the individual, and 2) the emotional reactivity of such individuals.

The reason for this is simple: it is only by separately measuring such characteristics that their individual effects on behavior can be evaluated. Personality measures which do not differentiate between these two types of individual differences can present considerable problems in interpreting the effects of "empathy" on human behavior. One's perspective-taking capabilities and emotional reactivity may both affect reactions to and behavior toward others, but without separate estimates of these qualities the independent and interactive contributions of each cannot be estimated.

Unfortunately, it appears that in the development of individual difference measures of empathy little consideration has thus far been given to the multidimensionality of the concept. Indeed, on those few occasions when measures of empathy have contained items tapping both the affective and cognitive domains, responses to all items are typically summed into a single empathy score, thus obscuring the separate influences that these components may have on behavior. For instance, Hogan's (1969) carefully constructed empathy measure includes both cognitive items (those assessing an intellectual response) and emotional items (which are concerned with the individual's affective response), yet combines responses to both types of items into a single empathy score.

Similarly, the Mehrabian and Epstein scale (1972), although ostensibly a measure strictly of emotional empathy, nevertheless contains some items assessing what can only be described as cognitive responses (e.g., "I rarely become involved when I watch a movie.") Again, however, all items on this measure are summed to produce a single empathy score.

Finally, the most widely-used measure of empathy in children (Feshbach & Roe, 1968) has characteristically confounded cognitive and emotional qualities of the respondent in producing a single empathy score. This test requires children to look at pictures of a child in various circumstances and then report how they (the respondents) feel. Thus, a fully "empathic" response depends not only on the respondent's cognitive/intellectual ability to recognize the emotion portrayed in the stimulus picture, but also upon his or her emotional reaction to the stimulus. Both of these respondent characteristics contribute to a single empathy score, again masking the individual contribution that each makes.

A second, and related shortcoming of previous empathy measures has been the lack of precision which characterizes many of them. For instance, tests of "social insight" (e.g., Chapin, 1942; Cassel, 1959) often utilize a format in which respondents read a series of brief vignettes describing some problematic interpersonal situation. After each of these short descriptions, respondents indicate which of several forced-choice behavioral alternatives is most appropriate for the situation, or which explanation of the vignette shows the most "insight" into the dynamics of the situation. Both of these measures are implicitly based on a "cognitive" definition of empathy -- empathy as the ability to interpret and understand the experiences and feelings of others. However, the validity of these measures seems suspect, since it appears likely that a wide range of traits or qualities related to interpersonal functioning -- and not just empathy -- contribute to scores on these measures. The Cassel measure is particularly questionable, and has been seriously challenged by reviewers (Bordin, 1960; Black, 1965).

Two other well-known empathy measures suffer from a similar problem. The Empathy

Test (Kerr, 1947) was an attempt to measure directly an individual's ability to take on the perspective of other persons. The test itself, however, asks respondents to estimate how some group (e.g., "non-office factory workers in the United States") would react to or judge some stimulus (e.g., ranking the popularity of different types of music, such as waltzes, polkas, etc.). It thus appears more likely that the Empathy Test taps the individual's general knowledge than that it measures a specific perspective-taking skill.

Dymond's (1949; 1950) rating scale method of assessing empathy has also been criticized for its lack of precision. The interested reader is referred to Cronbach (1955) for the most complete critique of this methodology. In brief, however, Cronbach's criticism is based on the fact that several clear and distinct components of the single "accuracy" score derived from this method can be identified. Most of the components, more importantly, seem unrelated to any cognitive ability to understand other people.

### Toward an Integration

In recent years a growing number of theorists have emphasized the necessity of carefully specifying which aspect of the empathic process is being examined, and of considering both the cognitive and emotional aspects of empathy when possible (Feshbach, 1976; Iannotti, 1979). Experimental investigations of empathy have already begun to utilize this strategy (e.g., Coke et al., 1978; Iannotti, 1979), with good results. What remains undone is the development of an individual difference measure of empathy utilizing this strategy -- one which provides separate assessments of cognitive, perspective-taking abilities as well as of emotional reactivity. Indeed, Deutsch and Madle (1975), in offering suggestions for future measures of empathy, recommended that attempts "be made to incorporate the various concepts of empathy. It is only through the recognition that empathy measures may not represent a single construct, but rather multiple and perhaps related constructs that more valid measures can be developed than in the past."

The remainder of this paper describes the development of a new, multidimensional individual difference measure of empathy. The two considerations which guided its development were 1) that it be easily administered and scored, and 2) that it be designed to capture separately individual variations in cognitive, perspective-taking tendencies of the individual as well as differences in the types of emotional reactions typically experienced.

## Instrument Development

### Empathy Questionnaire: First Version

A pool of over 50 items was initially amassed for the new empathy questionnaire. Some of these items were borrowed or adapted from other measures (e.g., Mehrabian & Epstein emotional empathy scale; Stotland's Fantasy-Empathy scale); the majority, however, were written for the new instrument. New items were designed to measure either cognitive aspects of empathy (such as the ability to adopt different perspectives, or points of view) or any of a variety of emotional responses to the observed emotional experiences of others. Two hundred and one (201) males and 251 females responded to these items on a five-point scale running from 0 (does not describe me well) to 4 (describes me very well).

Initial factor analyses of these data (Jöreskog Factor Analysis; oblique rotation; delta = 0), for males and females separately, revealed the existence of four major factors. These four groupings of items may be described as follows: fantasy items, which denoted a tendency of the respondent to identify strongly with fictitious characters in books, movies, or plays. Many of these items originally came from other instruments. Second, there were perspective-taking items, which reflected a tendency or ability of the respondent to adopt the perspective, or point of view, of other people. Third, there was a set of empathic concern items; these items assessed a tendency for the respondent to experience feelings of warmth, compassion and concern for others undergoing negative experiences. Finally, a set of items which can be described as personal distress items were identified, which indicated that the respondent experienced feelings of discomfort and anxiety when witnessing the negative experiences of others.

Although these four factors were the strongest in both sexes, some smaller and often less interpretable factors also emerged for either males or females. In preparing the second version of the empathy questionnaire, it was decided to focus attention on the four primary factors, and to use the factor analysis results as a "heuristic tool" in refining the items to better measure these constructs (Comrey, 1978).

#### Empathy Questionnaire: Second Version

A 45-item version of the empathy questionnaire was next constructed, utilizing 1) items taken intact from the preliminary questionnaire, 2) items adapted from that questionnaire, and 3) new items written to conform to one of the four empathy factors described above. The items appearing on the 45-item instrument are displayed in Table 1.

Table 1

#### ITEMS ON THE SECOND, 45 ITEM VERSION OF THE QUESTIONNAIRE

##### Fantasy Items

18. After seeing a play or movie, I have felt as though I were one of the characters.
9. I really get involved with the feelings of the characters in a novel.
3. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.
44. When I watch a good movie, I can very easily put myself in the place of a leading character.
33. Becoming extremely involved in a good book or movie is somewhat rare for me.
19. I daydream and fantasize, with some regularity, about things that might happen to me.
23. I do not try very often to imagine how my life might have been different.
12. I am usually objective when I watch a movie or play and I don't often get completely caught up in it.
41. When someone is telling a good story or joke, I become pretty involved with listening to it.

### Perspective-taking Items

- 26. I believe that there are two sides to every question and try to look at them both.
- 39. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
- 36. I try to look at everybody's side of a disagreement before I make a decision.
- 21. It's rare that some issue is ever black and white -- usually the truth is somewhere in between.
- 31. I sometimes find it difficult to see things from the "other guy's" point of view.
- 8. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
- 13. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
- 29. It's often harmful to spend lots of time trying to get everyone's point of view -- some decisions have to be made quickly.
- 16. I sometimes try to understand my friends better by imagining how things look from their perspective.

### Empathic Concern Items

- 43. I am often quite touched by things that I see happen.
- 14. Seeing warm, emotional scenes melts my heart and makes me teary-eyed.
- 25. When I watch a sad, "tear-jerker" movie, I almost always have warm, compassionate feelings for the characters.
- 32. I would describe myself as a pretty soft-hearted person.
- 20. Occasionally I am not very sympathetic to my friends when they are depressed.
- 37. Usually I am not extremely concerned when I see someone else in trouble.
- 34. Sometimes I don't feel sorry for other people when they are having problems.
- 27. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
- 6. When a friend tells me about his good fortune, I feel genuinely happy for him.
- 11. When I see someone being taken advantage of, I feel kind of protective toward them.
- 10. I care for my friends a great deal.
- 28. I often have tender, concerned feelings for people less fortunate than me.
- 4. When someone gets hurt in my presence, I feel sad and want to help them.
- 7. I feel sad when I see a lonely stranger in a group.

### Personal Distress Items

- 17. In emergency situations, I feel apprehensive and ill-at-ease.
- 45. I tend to lose control during emergencies.
- 38. Being in a tense emotional situation scares me.
- 30. When I am with a friend who is depressed, I become so uncomfortable that I can't really talk to him.
- 1. When I see someone who badly needs help in an emergency, I go to pieces.
- 24. It bothers me to see poor people on the street.
- 5. It occasionally embarrasses me when someone tells me their problems.
- 40. Sometimes disagreements with others become so intense that I can't deal with it at the time.
- 35. Other people's misfortunes do not usually disturb me a great deal.
- 42. When I see someone get hurt, I tend to remain calm.

22. I am usually pretty effective in dealing with emergencies.
15. I sometimes feel helpless when I am in the middle of a very emotional situation.
2. Although tense emotional confrontations are unpleasant, I can usually control myself pretty well.

The goal in the item selection process was to produce four sets of items which tapped as closely as possible the four psychological domains discovered in the preliminary analysis. Those items which had loaded most heavily on these four factors, therefore, served as "core" items, and the new items written for this version of the questionnaire were designed to match as closely as possible their content.

Administration of the second questionnaire. The items from the second item pool were randomly ordered to produce the 45-question instrument. Subjects again responded to each item on a 5-point scale running from 0 (does not describe me well), to 4 (describes me very well). Two hundred twenty-one (221) males and 206 females from introductory psychology classes were administered the questionnaire in large group testing sessions. Participation in the sessions constituted partial fulfillment of a course requirement.

## Results

Separate factor analyses were conducted on the data collected from male and female respondents. In order to discover whether or not the factor structure suggested by the earlier analyses would emerge from the responses to the new questionnaire, Jöreskog factor analyses were again conducted, using oblique rotation ( $\Delta = 0$ ). A four-factor solution was specified for the analysis in each sex.

The factors emerging from these analyses were nearly identical in both sexes. For both males and females, clear factors resulted which consisted of fantasy, perspective-taking, empathic concern, and distress items, respectively. The factor loadings of each item for both sexes are displayed in Table 2.



Table 2  
Factor Pattern Loadings of Second Empathy Questionnaire (45 items)

<u>Item</u>	<u>Fantasy</u>		<u>Perspective-taking</u>		<u>Empathic Concern</u>		<u>Personal Distress</u>	
	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>
#1	.05	.07	.02	.12	.01	-.12	.55	.65
#2	.20	-.22	.18	.09	.22	.17	-.31	-.31
#3	.58	.61	.21	.13	.11	.11	.01	.04
#4	.08	.02	.00	-.05	-.33	-.42	-.03	.06
#5	.22	.03	-.02	-.01	.09	-.16	.16	.09
#6	.03	.04	-.02	.06	-.23	-.34	-.27	-.07
#7	.21	.08	.09	.13	-.31	-.38	.15	.10
#8	-.05	-.09	.58	.48	-.15	.10	-.04	.01
#9	.59	.76	.16	.06	.05	.08	-.06	-.03
#10	.12	.05	.01	-.17	-.20	-.47	-.34	.00
#11	.13	-.08	.06	.01	-.41	-.44	-.10	-.18
#12	-.43	-.40	.08	.20	.08	-.13	-.05	.03
#13	-.08	-.06	-.36	-.37	.03	-.10	.04	.00
#14	.16	.28	-.03	.00	-.42	-.38	.30	.20
#15	.06	-.01	.06	-.09	-.03	-.08	.39	.37
#16	-.06	-.02	.34	.49	-.15	-.22	-.17	.09
#17	.17	.04	.02	-.01	.08	.03	.64	.62
#18	.66	.71	.18	.18	.00	.07	.04	.01
#19	.35	.32	-.17	-.03	-.13	-.01	-.03	-.18
#20	.09	-.02	-.14	-.11	.22	.26	.23	.02
#21	.20	.17	.37	.07	.14	.12	.07	-.25
#22	.09	.01	.14	-.13	.02	.19	-.61	-.56
#23	-.10	-.12	.03	.03	.03	-.13	-.05	.03
#24	.18	.02	.23	-.01	-.28	-.41	.21	-.05
#25	.48	.35	.01	-.10	-.33	-.46	.14	.15
#26	.00	.00	.65	.55	.04	.07	-.03	-.13
#27	.06	.03	.07	-.08	.47	.38	.09	.07
#28	.12	-.07	.06	.00	-.42	-.52	.08	-.04
#29	.14	-.05	-.17	-.21	.05	-.09	-.12	.00
#30	-.02	-.02	-.04	-.15	.12	.14	.36	.12
#31	.02	.06	-.25	-.53	.06	-.10	.19	.09
#32	.11	.04	.04	.01	-.43	-.63	.15	.15
#33	-.47	-.59	.06	.09	.05	.07	.07	.21
#34	.14	.03	-.09	-.14	.59	.44	.09	.09
#35	.05	-.03	-.09	-.15	.66	.53	-.10	-.02
#36	.00	.04	.72	.46	-.07	-.27	.00	-.12
#37	-.07	.02	-.13	-.08	.52	.26	.16	.11
#38	.12	-.07	.04	-.05	-.01	.06	.58	.45
#39	-.02	.02	.36	.69	-.09	-.06	-.05	.03

#40	.16	.17	-.15	-.06	-.05	.10	.18	.29 <sup>10</sup>
#41	.18	.19	.06	.13	-.14	-.25	-.12	.02
#42	.07	-.15	.06	.06	.18	.08	-.50	-.51
#43	.39	.21	.05	-.02	-.30	-.54	-.09	.05
#44	.84	.71	.09	.17	.00	-.12	.00	.00
#45	-.08	.01	-.05	-.03	-.02	.08	.72	.64

The frequency with which items loaded on more than one factor was quite low; only a handful of items had more than a minimal loading on more than the one intended factor. In most of these cases (for example, items 2, 14, and 25) only two factors were involved; the fantasy and empathic concern factors. Thus, with very few exceptions, the loadings of the items provide strong support for the multidimensional approach taken in the development of this questionnaire and more specifically provide validation of the four constructs identified subsequent to the preliminary questionnaire.

#### Final Item Selection for the Empathy Subscales

In order to produce the strongest, most reliable instrument possible, selection of items for the final four empathy subscales were guided by two primary considerations. First, items were examined to ascertain which ones loaded most heavily, in both sexes, on their respective factors. Those items loading highest on a factor for both males and females were selected for inclusion on the corresponding subscale. The only exceptions to this rule concerned those few items which loaded heavily on two or more factors; those items were not utilized for any subscale. This procedure resulted in an instrument consisting of four seven-item, unit-weighted subscales corresponding to the four factors identified earlier. The items comprising these subscales are presented in Table 3.

Table 3

#### Items Comprising the Final Four Empathy Scales

##### Fantasy Scale

(Standardized alpha coefficients: Males, .78; Females, .79)

26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.
5. I really get involved with the feelings of the characters in a novel.
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. (-)
16. After seeing a play or movie, I have felt as though I were one of the characters.
1. I daydream and fantasize, with some regularity, about things that might happen to me.
12. Becoming extremely involved in a good book or movie is somewhat rare for me. (-)
23. When I watch a good movie, I can very easily put myself in the place of a leading character.

### Perspective-Taking Scale

(Standardized alpha coefficients: Males, .71; Females, .75)

- 28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
- 15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (-)
- 11. I sometimes try to understand my friends better by imagining how things look from their perspective.
- 21. I believe that there are two sides to every question and try to look at them both.
- 3. I sometimes find it difficult to see things from the "other guy's" point of view. (-)
- 8. I try to look at everybody's side of a disagreement before I make a decision.
- 25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

### Empathic Concern Scale

(Standardized alpha coefficients: Males, .68; Females, .73)

- 9. When I see someone being taken advantage of, I feel kind of protective toward them.
- 18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (-)
- 2. I often have tender, concerned feelings for people less fortunate than me.
- 22. I would describe myself as a pretty soft-hearted person.
- 4. Sometimes I don't feel sorry for other people when they are having problems. (-)
- 14. Other people's misfortunes do not usually disturb me a great deal. (-)
- 20. I am often quite touched by things that I see happen.

### Personal Distress Scale

(Standardized alpha coefficients: Males, .77; Females, .75)

- 27. When I see someone who badly needs help in an emergency, I go to pieces.
- 10. I sometimes feel helpless when I am in the middle of a very emotional situation.
- 6. In emergency situations, I feel apprehensive and ill-at-ease.
- 19. I am usually pretty effective in dealing with emergencies. (-)
- 17. Being in a tense emotional situation scares me.
- 13. When I see someone get hurt, I tend to remain calm. (-)
- 24. I tend to lose control during emergencies.

The end result of the instrument construction process, then, was a 28-item questionnaire, consisting of four discrete, seven-item subscales. The fantasy scale (FS), which includes the three items from Stotland's (Stotland, Mathews, Sherman, Hansson, & Richardson, 1978) Fantasy-empathy scale, appears to tap the tendency to imaginatively transpose oneself into fictional situations (e.g., books, movies, daydreams). The second subscale, the perspective-taking scale (PT), on its face seems to reflect an ability or proclivity to shift perspectives -- to

step "outside the self" -- when dealing with other people. The items comprising this scale refer not to fictitious situations and characters, but to "real life" instances of perspective-taking. The other two subscales explicitly deal with individual differences in emotional responses to observed emotionality in others. The first of these, the empathic concern scale (EC), consists of items assessing the degree to which the respondent experiences feelings of warmth, compassion and concern for the observed individual. The personal distress scale (PD), on the other hand, measures the individual's own feelings of fear, apprehension and discomfort at witnessing the negative experiences of others.

The results of the factor analyses, coupled with the internal reliabilities (standardized alpha coefficients) computed for each scale and also displayed in Table 3, strongly support the view that these four subscales are reliably tapping separate dimensions of individual differences. However, in order to confirm this factor structure, the new 28-item questionnaire was administered to a third, independent set of respondents.

### Confirmation of the Final Empathy Questionnaire

Instrument. Items from the four subscales were randomly ordered to produce the final, 28-item version of the empathy measure. Respondents indicated for each question how well the item described them on a five-point scale anchored by 0 (does not describe me well) and 4 (describes me very well).

Subjects. Subjects receiving the final empathy questionnaire were students from introductory psychology classes at the University of Texas at Austin. None of these respondents had taken either of the first two versions of the instrument. Over 500 males (N=579) and females (N=582) completed the questionnaire in large group testing sessions. Participation in the sessions constituted partial fulfillment of a course requirement.

### Results

Separate factor analyses were conducted on the data collected from male and female respondents. Jöreskog factor analyses were again conducted, using an oblique rotation of factors ( $\delta = 0$ ). A four-factor solution was specified for the analysis in each sex.

The results of the factor analyses provided strong support for the utilization of the four empathy subscales. For both males and females, clear factors emerged which represented the four subscales. Table 4 displays the loadings of each item on these four factors for males and females. It can be seen that the seven items which load most heavily on each factor are the seven items comprising the appropriate subscale. This holds true for both sexes. In only one instance does an item load significantly on two factors. Item 10, for males, loads approximately the same on the personal distress factor (representing the "correct" subscale) as it does on the empathic concern factor.

Table 4

## Factor Pattern Loadings of Final Empathy Questionnaire (28 items)

<u>Item</u>	<u>Fantasy</u>		<u>Perspective-taking</u>		<u>Empathic Concern</u>		<u>Personal Distress</u>	
	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>
#1	-.34	-.29	-.11	.08	-.17	.02	-.07	.07
#2	-.03	-.03	.09	.11	-.66	-.54	.05	-.04
#3	-.04	-.05	-.56	-.54	.04	.04	.07	.05
#4	-.09	-.19	-.07	-.15	.34	.45	-.04	-.11
#5	-.60	-.52	.05	.06	.01	-.04	-.05	-.04
#6	-.01	-.03	-.05	.06	-.05	.00	.52	.69
#7	.35	.34	.13	.16	.09	.21	-.03	.03
#8	-.04	-.04	.58	.69	.03	.09	-.07	-.05
#9	-.07	-.14	.16	.17	-.41	-.30	-.18	-.02
#10	-.04	-.12	-.14	-.03	-.27	-.04	.26	.31
#11	-.06	-.14	.47	.53	-.14	-.11	.02	-.01
#12	.45	.39	-.01	.11	-.04	.24	.01	.13
#13	.07	.03	.01	.11	.19	.25	-.35	-.38
#14	-.02	-.02	-.01	-.02	.60	.64	-.02	.01
#15	-.01	-.07	-.45	-.39	-.04	-.07	-.03	.05
#16	-.74	-.76	-.01	-.01	.02	.12	.05	.07
#17	-.08	.01	-.05	.01	-.08	-.01	.47	.50
#18	.02	.00	-.05	.01	.39	.49	.09	.02
#19	-.08	-.10	-.02	.06	-.06	-.05	-.70	-.72
#20	-.15	-.24	-.04	.02	-.52	-.36	-.08	-.06
#21	-.04	-.10	.65	.74	-.01	.01	-.05	.06
#22	-.08	-.11	.12	-.05	-.53	-.48	.19	.03
#23	-.76	-.80	.12	-.01	.08	.03	.08	.00
#24	.01	.01	.05	-.04	.13	.04	.88	.79
#25	-.02	-.04	.51	.50	-.05	.02	.04	-.06
#26	-.74	-.61	.17	.15	.06	-.01	.06	.02
#27	-.02	.03	.02	-.07	.17	.06	.77	.64
#28	-.02	-.02	.48	.47	-.16	-.16	.03	-.10

Standardized  
alpha coefficients  
for the 7-item, unit-  
weighted scales

.78	.75	.75	.78	.72	.70	.78	.78
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The internal reliability coefficients (standardized alpha) were computed for each of the four subscales separately in each sex. These values are also displayed in Table 4. As can be seen, the reliabilities are quite similar to those obtained earlier; coupled with the results of

the factor analyses, there is convincing evidence that an internally reliable set of subscales has been developed. The factor structure underlying the subscales is virtually identical for both males and females, and remained constant over administration of the questionnaire to two independent samples.

Test-retest reliabilities. In order to assess the reliability over time of the four empathy subscales, an independent sample of University of Texas undergraduates (56 males; 53 females) completed the questionnaire twice. The elapsed time between the first and second administration of the questionnaire to a respondent ranged from 60 to 75 days. The correlation between the test and retest scores are displayed in Table 5. For males, the correlations ranged from .61 to .79, and for females from .62 to .81. Thus, both sexes exhibited satisfactory temporal stability with respect to the new empathy subscales.

Table 5

Test-Retest Reliability Coefficients for the Four Empathy Subscales  
(Interval Between First and Second Administration of the  
Questionnaire from 60 to 75 days)

	Fantasy <u>Scale</u>	Perspective Taking <u>Scale</u>	Empathic Concern <u>Scale</u>	Personal Distress <u>Scale</u>
Males	.79	.61	.72	.68
Females	.81	.62	.70	.76

Sex differences. Significant differences between males and females were found for each of the four subscales, with women displaying higher scores than men in each case. The largest difference was found for the fantasy scale; the mean score on this scale was 18.75 for women, and 15.73 for men,  $F(1,1176) = 96.28$ ;  $p < .001$ . Mean scores on the other three subscales, for women and men, were as follows: perspective-taking scale, 17.96 *vs.* 16.78,  $F(1,1180) = 18.25$ ;  $p < .001$ , empathic concern scale, 21.67 *vs.* 19.04,  $F(1,1180) = 129.09$ ;  $p < .001$ , and personal distress scale, 12.28 *vs.* 9.46,  $F(1,1181) = 103.10$ ;  $p < .001$ . Thus, consistent with previous research (e.g., Dymond, 1949, 1950; Mehrabian & Epstein, 1972; Hoffman, 1977b), women exhibited higher scores than men on all four measures of empathy.

Subscale intercorrelations. The intercorrelations of the four empathy subscales are displayed in Table 6. The patterns are highly similar for males and females, and two important factors are obvious from these data. First, the fantasy and perspective-taking subscales are essentially unrelated, with a correlation of approximately .10 in both sexes. Given the size of the sample (over 500 in each sex), these correlations are significant, although modest in size. Second, the two "emotional" subscales (empathic concern and personal distress) are also nearly orthogonal ( $r = .11$  for males;  $r = .01$  for females). In addition, both males and females display a moderate correlation between fantasy scale scores and empathic concern scores ( $r$ 's = .33 and .30), but little relationship with personal distress. The perspective-taking scale is also positively related to empathic concern ( $r$ 's = .33 and

.30), but somewhat negatively related to personal distress scores ( $r$ 's =  $-.16$  for males and  $-.29$  for females). It can be seen, then, that although some association exists between what appear to be cognitive and emotional empathic dispositions, the relationships are not so strong as to imply that the scales are measuring the same construct. One implication of these intercorrelations is that one's standing on a particular subscale is not a powerful predictor of scores on the other scales. Given the relative independence of the scales, a variety of "empathy constellations" are possible from this instrument.

Table 6  
Intercorrelations of the Four Empathy Subscales

Males (N = 582)			
	<u>Perspective- taking Scale</u>	<u>Empathic Concern Scale</u>	<u>Personal Distress Scale</u>
Fantasy Scale	.10	.30	.16
Perspective- Taking Scale		.33	-.16
Empathic Concern Scale			.11
Females (N = 587)			
	<u>Perspective taking Scale</u>	<u>Empathic Concern Scale</u>	<u>Personal Distress Scale</u>
Fantasy Scale	.12	.31	.04
Perspective- Taking Scale		.30	-.29
Empathic Concern Scale			.01

Note: Correlation coefficients greater than .10 were significant beyond the .01 level.

The data reported here support the contention that this new measure of empathy reliably assesses four separate, and relatively independent, qualities of the individual. The discovery of the same four factors among both men and women, in two independent samples, argues convincingly for the stability of this factor structure. This conclusion is further bolstered by the findings of satisfactory internal reliability (Cronbach's standardized alpha), and test-retest reliability. In short, the new measure seems to reliably tap stable characteristics of the respondent.

Although the same factor structure is found for both sexes, women score significantly higher than men on all four subscales, a finding consistent with most other measures of empathic tendencies (e.g., Dymond, 1949; 1950; Mehrabian & Epstein, 1972). It is informative, however, to examine the relative size of this sex difference for each of the four scales. The smallest difference between men and women clearly obtained for the perspective-taking scale (PT), where the mean difference was just over a single scale point (1.18). In contrast, the other three subscales all exhibited sex differences greater than 2.5 scale points. This pattern closely approximates what might have been predicted on the basis of Hoffman's (1977b) review of sex differences in empathy.

It was Hoffman's conclusion, after a careful review of the literature, that consistent differences between males and females probably do exist with respect to their affective responses to others' experiences. In fact, females exhibited greater responsivity (although not always significantly greater) in 16 out of 16 independent samples. However, a similar review of the literature concerning role-taking, and recognition of affect in others, revealed no consistent sex difference (Hoffman, 1977b). It is noteworthy, then, that the smallest sex difference among the four new subscales is found for the PT scale -- a measure of respondents' perspective-taking (or role-taking) tendency.

The intercorrelations among the perspective-taking, empathic concern, and personal distress scales also may be interpreted as supporting Hoffman's (1976) speculation about the development of "sympathetic concern." In brief, Hoffman has hypothesized that early in development, the child cannot differentiate well between the self and others. Thus, when observing another in distress, the child typically experiences it as his/her own distress. With time, however, this "empathic distress" gives way to what is termed "sympathetic concern" -- feelings of compassion and sympathy for the person in trouble. One important factor contributing to this shift is said to be the development of role-taking skills in the child; as the ability to apprehend others' perspectives develops, the self-centered empathic distress is transformed into other-oriented concern.

The significant positive correlation in both sexes between the perspective-taking scale and the empathic concern scale, coupled with the significant negative correlation between perspective-taking and personal distress scales, support this view. That is, among adults, greater perspective-taking tendencies are associated with less personal distress to others' experiences and more concern for the other, thus replicating the development pattern set forth by Hoffman.



The new measure, then, may be said to have the following characteristics. First, it has excellent psychometric properties. The factor structure remains constant for both sexes across independent samples and across repeated administration. In addition, the internal reliability of the four scales is quite acceptable. Second, the pattern of sex differences found for the four scales is consistent with the general pattern found in empathy research. Females score substantially higher than males on the measures of emotional reactivity (including the fantasy scale), and less strongly so on the scale most clearly measuring perspective-taking ability. Finally, the relationships found to exist among these subscales also support previous theorizing about the development of empathic tendencies (Hoffman, 1976). That is, greater perspective-taking ability is associated with greater feelings of empathic concern for others and less feelings of personal unease in the face of others' negative experiences. The new instrument therefore appears quite well-suited for use as a research tool in studying empathy, and especially useful in investigations of the multi-dimensional nature of the empathic process.

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