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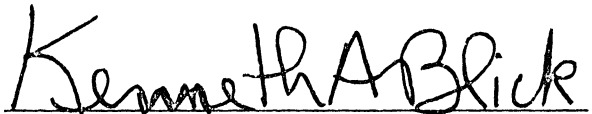
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University of Richmond

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SPEED OF VERBAL CONFLICT RESOLUTION AS RELATED TO
THE GUILFORD-ZIMMERMAN TEMPERAMENT SURVEY
AND THE TAYLOR MANIFEST ANXIETY SCALE

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Abstract

Eleven Guilford-Zimmerman Temperament Survey Scale scores and the Taylor Manifest Anxiety Scale scores of 80 Ss were related in four multiple regression equations to average resolution times of Approach-Approach, Avoidance-Avoidance, Double Approach-Avoidance Verbal Conflicts and an average time of all conflict types. The four multiple correlations, however, were not significant. Females displayed significantly shorter times for Double Approach-Avoidance resolution than males. No significant sex differences were found for Approach-Approach or Avoidance-Avoidance conflict type resolution.

Low drive Ss as defined by the Taylor Manifest Anxiety Scale did not significantly differ in times to resolve all conflict types compared to high drive Ss. All conflict types differed significantly from each other at both drive levels. A previous study by Fracher and Blick (1973) using motor conflicts was not supported.

Lewin (1931) is primarily credited with introducing the subject of conflict to psychology. According to his field theory (1935), an organism experiences restless, nondirected behavior. Objects in the organism's environment given behavior direction because of the object's attractiveness or repulsiveness. If the object is attractive to the organism, the object is said to have a positive valence. If the object is repelling, it is said to have a negative valence. A positively valence object will elicit approach behavior in an organism; a negatively valenced object will elicit avoidance behavior.

The particular charge of a valence, however, was not considered by Lewin (1935) to be static. Lewin (1935) spoke of induced valences whose charge was a function of not only purely environmental factors, but also due to psychological and social factors. That is, valences may not be directly related to the physiological needs of, e.g., a child. Instead, an object may acquire a valence vis-a-vis the child through the reaction of another person, e.g., an adult, to the object.

Lewin (1931) further defined conflict as the "opposition of approximately equal strong field forces" and postulated three types of conflict. Type I conflicts are those in which the organism would find himself between two positive valences where

he must make a choice between them. A Type I conflict decision is considered not to be too difficult. A Type II conflict would confront the organism with a goal having simultaneously a positive and negative valence. Supposedly, this type of conflict is characterized by vacillation and indecision.

Lewin's (1931) Type III conflict places the organism between two negative valences neither of which the organism wished to choose and would like to have avoided by going out of the conflict field. Oscillation was supposed to have been typical of Type III conflict situations.

Hovland and Sears (1938) renamed these conflicts as approach-approach (Type I), approach-avoidance (Type II), and avoidance-avoidance (Type III). They also conceptualized a fourth type of conflict which is composed of the existence of two type II conflicts simultaneously. In this conflict, a double-approach-avoidance, has been considered to be the most representative of the conflicts encountered in one's daily life. Few decisions in daily life have clear cut consequences.

Hovland and Sears (1938) were the first to deal with Lewin's conflict types in the laboratory. Hovland and Sears

used a type of conflict board and investigated the four types of conflicts using a motor task. They were concerned with the degree of difficulty inherent in each type of conflict and most frequent mode of resolution used for each conflict type. Four modes of conflict resolution were available to Hovland and Sear's Ss: (a) a single response, i.e., a choice of one goal, (b) a double response, i.e., a choice of both goals, (c) a compromise response, i.e., a choice somewhere between the two goals, and (d) failure to make a response. The results indicated that the approach-approach conflict (AP-AP) was the most easily resolved since it was solved most often by a single response. Approach-avoidance (AP-AV) and avoidance-avoidance (AV-AV) conflicts were typically resolved with double and blocking responses, respectively, and consequently judged to be more difficult than an AP-AP conflict. Double approach-avoidance (DAP-AV) conflicts were judged to be the most difficult of the four conflict types in that the blocking mode of resolution had the highest percentage frequency of occurrence.

While Hovland and Sears concentrated on motor conflict resolution, Arkoff (1957) carried the experimentation into the realm of verbal conflict resolution. Arkoff restricted his experimentation to AP-AP conflicts and AV-AV conflicts. Arkoff was perhaps the first to attempt to emotionally involve his Ss in conflict resolution. Using (a) the amount of time to resolve the two

types of conflicts and (b) the number of each type of conflict judged to be easiest to resolve, Arkoff found that Ss took significantly more time to resolve AV-AV conflicts than AP-AP conflicts. At the same time, AP-AP conflicts were shown to be easier to resolve than AV-AV conflicts, based on the number of AV-AV conflicts judged by the Ss to be difficult compared to the number of AP-AP conflicts.

Arkoff's (1957) AV-AV conflicts were those in which the Ss were required to choose between two positive personal characteristics that they would rather have to a lesser degree. For example, an AV-AV conflict situation question would be phrased as: "Which would you rather be?: less healthy than you are now, or less honest than you are now." The S was required to choose between the two alternatives, less health or less honest. The two adjectives themselves are supposedly equal in desirability to the S. AP-AP conflicts involved a choice between two positive personal characteristics that the S would rather have to a greater degree. They are the same adjectives used in the AV-AV conflicts except that they are prefaced with the additional adjective, more. For example, in AP-AP conflict resolution, the S must decide whether he would rather be more health or more honest than he is now.

Edwards and Diers (1962) gave Ss pairs of items from the Edwards Personal Preference Survey (EPPS) in verbal conflict form along with the instructions which allowed them to omit items where

the Ss felt the choice between the items might be too difficult to make. Selected from the EPPS were 40 items that were believed to be socially desirable and 40 that were believed to be socially undesirable. Edwards and Diers felt that socially desirable items, when paired, would compare to AP-AP conflicts, and paired undesirable items would be comparable to AV-AV conflicts. As they predicted, socially undesirable items led to a significantly greater number of no choice responses, indicating that these items were more difficult to choose between than were the socially desirable items.

Minor, Miller and Ditricks (1968) replicated Arkoff's study (1968) and added an undecided alternative. The Es proposed that the effect of the undecided alternative would reduce resolution times of AV-AV conflicts because the Ss would be allowed to avoid making the decision altogether. On the other hand, they hypothesized that the effect of the undecided option effect on AP-AP conflicts would be negligible. Results confirmed Arkoff (1957); the addition of the undecided alternative sharply decreased AV-AV conflict resolution times compared to Arkoff's data, however.

Powell (1971) concluded after reviewing conflict literature that verbal conflict resolution was a function of (a) the particular type of conflict, e.g., AP-AP, etc, (b) differential strengths of competing response predispositions in the Ss and (c) the number and kinds of alternatives available to the S.

Powell also pointed out that while an individual may have unique ways of coping with conflict situations, his process of resolution has features which he shares with others. Individuals can be characterized according to their approach to conflict as logical, irrational, impulsive, rapid, slow, vascillating, etc. At the same time, however, Powell noted that there was little research in how an individual might acquire his particular mode of solving conflicts.

To measure how conflict decision modes are acquired, Powell measured conflict decision speed of Ss after they had observed a model who was either reinforced verbally by the E for fast conflict resolution (RF), for slow conflict resolution (RS), or not reinforced at all (NR). Her results indicated that AP-AP conflicts are resolved significantly faster than AV-AV conflicts and that each of these types of conflicts were resolved faster than double approach-avoidance conflicts (DAP-AV). A DAP-AV verbal conflict requires the S to make a choice between two pairs of personal characteristics. Each pair contains a positive and a negative preface adjective. For example, a DAP-AV conflict situation is phrased as, "Which of the following would you rather be? More confident but less well-adjusted than you are now or more well-adjusted but less confident than you are now." Again, it is thought that perhaps the DAP-AV conflict best approximates real life conflict situations. The Ss who

observed a model in the RF condition differed significantly from those in the RS condition. The RF and RS times did not, however, differ significantly from resolution times of Ss in the NR condition.

Fracher (1972) and Fracher & Blick (1973) examined motor and verbal (AP-AP, AV-AV, and DAP-AV) conflict resolution times as a function of the Taylor Manifest Anxiety Scale (TMAS). High drive (HD) Ss, as defined by the TMAS, took longer to resolve all types of conflicts, motor and verbal, than did low drive (LD) Ss. For HD Ss, AP-AP conflicts were resolved faster than AV-AV conflicts and each of these types of conflicts were resolved faster than DAP-AV conflicts. For LD Ss also, all three types of conflicts, motor and verbal, differed significantly in resolution times, and in the same order as the HD group. An ex post facto study, however, indicated that in both HD and LD groups, for verbal conflicts reading time differences for individual items in the DAP-AV conflicts compared to the items in either AP-AP or AV-AV conflicts could have accounted for the resolution time differences between DAP-AV conflicts and AP-AP conflicts or AV-AV conflicts. The AV-AV and AP-AP conflicts contained 12 words; DAP-AV conflicts contained 18 words.

Fracher (1972) suggested that future studies could relate verbal conflict resolution to personality characteristics in order to

identify "the kinds of persons who respond with indecision and uncertainty under minimal conflict or with dispatch, speed, and lack of vacillation under conflicts of considerable complexity (Kimble and Garnezy, 1963, p. 489). Fracher went on to suggest any number of personality tests could be related to conflict resolution as the TMAS was in his study. It is from the above suggestion and the ex post facto consideration that the present study originated.

The Guilford-Zimmerman Temperament Survey (GZTS) and the Taylor Manifest Anxiety Scale (TMAS) were selected as psychometric measures to be related to verbal conflict resolution times for the following considerations.

The Guilford-Zimmerman Temperament Survey (GZTS) (Guilford and Zimmerman, 1949) yields ten scores: General Activity (G), Restraint (R), Ascendance (A), Sociability (S), Emotional Stability (E), Objectivity (O), Friendliness (F), Thoughtfulness (T), Personal Relations (P), and Masculinity (M). The present study used also the Gross Falsification (GF) Scale, as a means of ascertaining whether or not Ss answered the GZTS accurately. Each of the ten traits is evaluated by "yes", "no" or "undecided" responses to 30 affirmative statements for each trait.

Reviews of the GZTS have been generally favorable regarding its validity. Saunders (1959) pointed out that the GZTS is used more in research than in practical application. He feels that the test has

done much to demonstrate the factor analytic approach to personality research but that the test is neither fish nor fowl where practical applications are concerned, i.e., with individual predictions. Saunders makes this statement in light of the fact that the scale reliabilities average .80, and this is not sufficient for predictions regarding an individual particularly when one or two of the scales correlate with a given criterion.

Stephenson (1953) felt that the normative and necessary corroborating information of the GZTS were adequate and well presented. Also, he lauded the clarity of the scales but at the same time argued that the undecided alternative should be omitted. That is, he was in favor of a forced choice response, i.e., "yes" or "no".

Herzberg (1954) has demonstrated that the distributions of GZTS scores of individuals tested in an industrial setting are significantly higher than those of college students or vocational education clients. Guilford (1949) indicates that extremely high scores on traits are not altogether desirable. Herzberg, however, makes this analysis unrealistic because of the definite negative skewness of the distribution of the scores of the industrial population. The development of the Gross Falsification Scale (GF) was a later attempt by Guilford to correct this situation.

Wagner and Sober (1964) found that the M scale negatively contributed to a multiple regression equation, along with the School and College Ability Test (SCAT), which predicted academic

scales as being at the opposite pole to neuroticism and reflecting integrative forces in the normal personality. Murray and Galvin claimed that the greater amount of research completed on the MMPI lends substantiation Guilford and Zimmerman's claims of the implications of the E and O scales.

A comparative analysis of selected GZTS scores and the Taylor Manifest Anxiety Scale (TMAS) was carried out by Linden and Olsen (1959). According to their results, the GZTS E and O scales appear to measure the same variable or variables that the TMAS measures. The F and P scales, supposed to measure hostility, were not shown to be negatively related to anxiety as the experimenters had hypothesized. However, they did find a positive significant relationship between the P scale score and the Minnesota Multiphasic Personality Inventory (MMPI) Lie Scale score which was available for their subjects. This led Linden and Olsen to believe that individuals scoring high on either of these scales may be attempting to portray themselves in the best possible light. Further, their results indicated that low drive (LD) Ss as defined by the TMAS, score differently from medium drive (MD) and high drive (HD) Ss regarding the P and MMPI Lie scale. The MD and HD Ss did not differ from each other however. They also concluded mid-range TMAS may be less indicative of manifest anxiety than high or low scores, casting some doubt on

Child should be supported in that HD Ss performance on DAP-AV conflicts was inferior to their performance on simpler AV-AV and AP-AP motor conflicts. However, it should be noted that LD Ss also indicated the same decrease in performance as they progressed from AP-AP conflicts to DAP-AV conflicts albeit their performance at each conflict type was superior to HD Ss.

The present experiment focused on relating verbal conflict resolution to the 10 scale scores of the GZTS, the Gross Falsification score (GF) of the GZTS, and the TMAS score of Ss after the verbal conflicts had been rewritten to satisfy Fracher's (1972) ex post facto consideration. Based on previous research, the following results were predicted.

1. The DAP-AV conflict resolution times will be significantly greater than AV-AV conflict resolution times, which will in turn be significantly greater than AP-AP resolution times.
2. The GZTS scores of Sociability (S), Emotional Stability (E), and Objectivity (O) will correlate significantly and negatively with AV-AV and DAP-AV conflict resolution times; the higher the GZTS score, the lower the resolution time.
3. Four significant multiple correlations will be developed relating (1) the 10 GZTS scale scores (2) the GZTS GF score and (3) the TMAS score as predictor variables to each of the four predicted variables: (a) AP-AP conflict resolution times (b) AV-AV conflict resolution times (c)

DAP-AV conflict resolution times and (d) an average of all three conflict type resolution times. Possibly a personality profile will emerge as a predictor of conflict resolution behavior.

4. By a Drive X Conflict type ANOV, it will be demonstrated that for each conflict type, drive level will be significant. HD Ss taking longer to resolve conflicts than LD Ss. Also, for each drive level, all three conflict types will differ significantly from each other in resolution time.

METHOD

Subjects. A total of 137 college students from six introductory psychology classes and one developmental class were administered the GZTS during a class session. Later they were individually timed for conflict resolution performance and then given the Taylor Manifest Anxiety Scale (TMAS) to complete. A sample of 57 Ss were selected randomly to be used for cross validation purposes and the remaining 80 Ss were used for the initial multiple correlations.

Apparatus. The verbal conflict board used was a modification of the board actually used by Fracher (1972) which was a variation of the motor conflict board used by Hovland and Sears (1938). The apparatus consisted of a plywood base, 3 ft. in length by 2 ft. in width, and divided in the middle by a plywood partition 18 in. in

height. This partition contained 3 slots to allow for exchanging 3 x 5 index cards containing verbal conflicts between the E and S. This design was undertaken to prevent any timing variability due to the E's reaction time. The three slots in the partition were located 2 in. apart from each other in a row 12 in. from the base of the conflict board. The center slot contained a metal funnel on the E's side of the vertical partition to facilitate passing cards to the S. The slots on the left and right had similar funnels on the S's side of the partition. A switch in the center slot activated a Hunter Silent Timer when a card was passed through the slot. The switch also prevented the S from passing the card back through the center slot. A switch in either the left or the right slot deactivated the timer when a card was passed back to the E by the S. The Hunter Silent Timer is the modification of Fracher's apparatus (1972) previously mentioned. All printing on the back of the timer was deleted with black ink.

Conflicts were presented on 30 3 x 5 index cards. Each card was numbered in the upper right hand corner and was colored according to the conflict type it represented: white for AP-AP, pale yellow for AV-AV, and light blue for DAP-AV. The format of the cards was as follows. Across the top of the card was typed the question: "Which would you rather be?". The ensuing alternatives were typed on the left and the right side of the card below the question. An

example of a card for AP-AP and AV-AV conflicts is given in Table 1.

Insert Table 1 about here

DAP-AV cards were slightly modified from those used by Powell (1971) and Fracher (1972) so that the alternatives would total 12 words as did the AP-AP and AV-AV conflict alternatives. An example of a DAP-AV card is presented in Table 2.

Insert Table 2 about here

The 10 pairs of adjectives used as alternatives by Fracher (1972) were used in this experiment. Each pair was put in AP-AP, AV-AV, and DAP-AV form as per Tables 1 and 2 resulting in a total of 30 conflicts. Fracher in turn selected the 10 pairs he used from the 15 possible pairings of 6 adjectives (well-adjusted, honest, sincere, intelligent, healthy, and confident) judged to be high in personal desirability by Powell (1971). Powell (1971) made the assumption the above adjectives made equally difficult conflict situations when paired according to conflict types, i.e., AP-AP, etc.

Procedure. The Ss were given the GZTS in six introductory psychology classes and one developmental class at the University of Richmond. The Ss were instructed that the test would be used as a vehicle for personality research. They were also informed that they could be informed of the results of the test as a partial

TABLE 1

Format for AP-AP or AV-AV Items

Would you rather be:

More confident than you
are now

More honest than you
are now

TABLE 2

Format of DAP-AV Items

Would you rather be:

More honest but less
healthy

More healthy but less
honest than now

objective assessment of themselves. The following instructions were read to them.

You are going to participate in research for a master's thesis. The research consists of two phases. In phase I, today, you will take a personality test. Phase II will be administered in the next three weeks individually in the psychology department. There are sign-up sheets for individual appointments here on the desk. Please select a convenient time after you have completed the test.

I do not want at this time to say anything about the objective of this research. I will come back to this class when the research is completed to explain what we have done, and what we have found. Also, I will at that time make individual appointments with you, if you wish, to discuss the results of the test that you will take today.

Your scores on today's test will be held in strict confidence.

No additional instructions, other than those on the test booklet were given. No information was given vis-a-vis a maximum allowable number of question marks. If the S did not finish the test within 45 minutes, the time of the class period, he was told that he could finish it at the Dept. of Psychology after he had completed phase II.

Of the 222 Ss tested with the GZ, 198 came to the Dept. of Psychology for Phase II. Of these 198 Ss, 56 were eliminated on the basis of question mark responses. A criterion for invalidation of test results of greater than 4 question marks on any one GZ factor was used (Overton, 1973).

The mean and standard deviation GF (falsification) score of the remaining males and females was calculated. Males averaged 8.97 GF responses with a standard deviation of 3.24. Females averaged 10.40 with a standard deviation of 4.40. A criterion for further elimination of Ss was established as any GF score greater than 2 standard deviations above the mean of the Ss (Overton, 1973). Thus 3 additional males and 2 females were eliminated.

After the above elimination, 137 Ss (71 males, 66 females) remained who satisfied both GZ conditions and who participated in conflict resolution and completed the TMAS. Eighty Ss were randomly selected to be used in computing the initial four multiple correlations. The remaining 57 were reserved for cross validation.

For the conflict resolution phase, Ss were seated in an experimental room. From the entrance of the room, only the S side of the conflict board was visible. Then they were asked to read the following instructions silently while the E read them aloud.

In front of you is a vertical board with three slots in it. When we are ready to begin, I will signal you by saying "OK" and then will pass a card to you through the center slot. Each card you receive will contain a conflict which you must resolve. Study the alternatives of the conflict presented. After choosing one of the alternatives pass the card back to me through the slot to your left if your choice is the alternative on the left side of the card. Pass the card back to me through the slot to your right if your choice is the alternative on the right side of the card. Now I am going to pass to you a card to serve as an example which will familiarize you with the format of the card and what to do when you have made a decision.

Pay no attention to what I record on this side of the board. Pay no attention to the color of the cards presented to you. Imagine that each conflict really confronts you. Be sure that your choice is one you would make if you really had to decide. Take as much time or as little time with each card as you like.

I will not be able to answer any questions once we have begun. Now, if there are no questions, we will begin.

The Ss were asked to rest both forearms on the conflict board. This was done in order to standardize the distance as much as possible of the S from the slots.

The 30 conflicts were then randomly presented to the S. Resolution time for each conflict was measured to the nearest hundredth of a second. A mean score for the three conflict types was calculated, as well as a grand mean for the 3 conflict types.

Following completion of conflict resolution performance, the Ss was given a TMAS and asked to complete it in a second experimental room. The title, Taylor Manifest Anxiety Scale, was deleted with black ink.

RESULTS

Four multiple regressions were performed using the ten GZTS scale scores, the Gross Falsification score, and the TMAS scores as predictor variables, and the four Conflict Resolution Scores each as dependent variables. None of these four regressions were significant.

In performing the above regressions, an intercorrelation matrix was developed for the 41 males and 39 females, and is presented in Table 3. Significant correlations in each table are indicated with astericks. An r of .283 ($p < .01$) and .217

 Insert Table 3 about here

($p < .05$) is needed for significance. It should be noted that the correlations involving M in Table 3 are essentially meaningless since the Ss in this matrix are heterogeneous for sex.

A second intercorrelation matrix was generated using 41 males (Table 4) which allowed comparison to a matrix presented by Guilford and Zimmerman (1949, p. 7) in Table 5. It should be noted that the Guilford-Zimmerman matrix uses only males,

 Insert Tables 4 and 5 about here

and that the authors refer only to r 's of .60 and over as "uncomfortably high." Correlations in his matrix, except those involving T , are significant if above .181 ($p < .01$) and .138 ($p < .05$). All correlations not involving T are tetrachoric r 's which are not as reliable as Pearson r 's. Correlations involving T in the Guilford and Zimmerman matrix are significant at .205 ($p < .01$) and .267 ($p < .01$), and are Pearson r 's.

TABLE 3

Intercorrelation Matrix¹All Variables, 80 Ss

(41 Males, 39 Females)

TMAS	G	R	A	S	E	O	F	T	P	M	GF	AP-	AV-	DAP-	TOT
												AP	AV	AV	
	**	**	**	**	**	**		**	**		**				
S	-31	35	-44	-34	-69	-57	-04	33	-33	-30	50	-03	06	02	02
		*	**				*			*	**				
		-23	40	21	19	05	-24	-02	-03	24	30	-13	-17	-12	-15
			*	**			**	*		**					
			-27	-30	-12	00	31	26	-05	-23	-16	-07	-03	-09	-05
				48	30	18	-27	16	09	48	32	-06	-11	-06	-07
					*	*					**				
					28	27	-01	-06	20	-10	47	-01	-06	-00	-02
						**	**	**	**	*	**				
						67	31	-36	33	27	55	-04	-08	-02	-04
							**	**	**		**				
							50	-32	52	13	49	01	04	02	02
								**							
								-08	35	-18	21	11	20	11	14
									03	01	44	10	17	17	16
										*	**				
										-24	31	09	14	09	11
											12	06	02	08	06
												-07	-08	-04	-06
													**	**	**
													83	83	92
														**	**
														86	94
															**
															97

¹Decimals have been omitted

TABLE 4

Intercorrelation Matrix¹

All Variables (41 Males)

TMAS	G	R	A	S	E	O	F	T	P	M	GF	AP- AP	AV- AV	DAP- AV	TOT
TMAS	**	**	**	**	**	**			**	**	**				
	-36	40	-51	-44	-65	-54	-07	20	-34	-41	-55	-12	-01	-09	-09
G		-12	*	*	*										
		24	21	22	04	-15	-14	-02	19	19	-05	12	-05	-08	
R			-13	-21	-09	00	24	39	-17	-21	-04	**	*	*	
			72	32	20	-18	17	13	49	35	06	-02	03	03	
A				*	*	*			*	*	**				
				28	26	-09	03	11	23	41	17	09	16	16	
S					*	*	*	*	*	*	**				
					61	52	-20	30	26	59	05	05	11	09	
E						**	**	**	**	**	**				
						65	-21	52	21	59	05	13	18	14	
O								**	**	**	**				
								-03	39	-03	53	-06	08	02	02
F									04	11	06	-01	14	06	07
T											**	**	*	*	
										-02	37	10	30	24	23
P											**	**	**	**	
											39	19	19	18	20
M												*	*	**	**
												26	31	33	33
GF													**	**	**
AP- AP													80	83	91
AV- AV														**	*
														86	94
DAP- AV															**
															97
TOT															

¹Decimals have been omitted*Significant at $p < .05$ ($r = .210$)
**Significant at $p < .01$ ($r = .325$)

TABLE 5
 Intercorrelations of Scores
 on the GZTS ¹

	G	R	A	S	E	O	F	T	P	M
G		* -16	** +34	** +35	** +34	** +14	** -17	* +24	-03	** +30
R			** -08	** -21	** 08	** 05	** +25	** 42	* +14	** -01
A				** 61	** +35	** 41	** -25	** 19	** 04	** 29
S					** 23	** 36	** -06	** 04	* 18	** 21
E						** 69	** 37	** -13	** 34	** 37
O							** 34	** -04	** 43	** 32
F								** -03	** 50	** 26
T									** 22	** -12
P										** 35
M										

* Significant at $p < .05$

** Significant at $p < .01$

¹All correlations except those involving T are tetrachoric, N = 266 lower division college men correlations involving T are Pearson Product Moment Correlations, N = 100 men ages 17-50.

$p < .05 = .138$

$p < .01 = .181$

For all scales except those involving T

$p < .05 = .205$

$p < .01 = .267$

For scales involving T

As far as is logically possible to compare Pearson r's with Tetrachoric r's, those correlations in the GZ matrix which differ significantly from those Table 4 are underlined.

Means of the scale scores of the 71 males and 66 females used in this study have been graphically compared in Figure 1 to the

 Insert Figure 1 about here

Guilford-Zimmerman normative data which used 523 men and 389 females except for the T score which used 116 men and 136 females. Approximate percentile values of the means can be estimated from this chart. The standard deviations and the means again are presented in Table 6.

 Insert Table 6 about here

A 2 x 3 ANOV, Sex X Conflict, with repeated measure on Conflict was performed on the 137 Ss used in regression analysis and reserved for cross-validation (Table 7). The ANOV yielded a significant

 Insert Table 7 about here

Conflict X Sex interaction ($F_{2,270} = 434.28, p < .05$). This is shown in Figure 2.

 Insert Figure 2 about here

PROFILE CHART FOR THE GUILFORD-ZIMMERMAN TEMPERAMENT SURVEY
For high-school, college, and adult ages

Name	Date	Comment	C SCORE	G		R		A		S	E	O	F		T	P		M		CENTILE RANK	NEAREST T SCORE
				General Activity Energy		Restraint Seriousness		Ascendance Social Boldness	M				F	Social Interest Sociability		Emotional Stability	Objectivity	Friendliness Agreeableness	M		
vity ness	10		10	30 29 28		30 29 28 27		30 29 28 27	30	30	30		30 28 26	30	30	29	30	30 29 29	0 1	99	75
	9		9	27 26		26 25 24		27 26 24	29	28	28		25 24	27	27	28	27	28 27	2 3		70
	8		8	25 24		24 23		25 24 21	28	26	26		23 22 21	25	25	26	25	26 25	4 5	95 90	65
	7		7	23 22		22 21		23 22 21	20	26	24		20 19	23 22 21	23	24	23	24	6 7	80	60
	6		6	21 20		20 19 18		20 19 18 16	24	22	22		18 17 16	20	21	22	21	23 22	8 9	70 60	55
	5		5	19 18 16		17 16 15		17 16 15 14	21	19	19		15 14 13	17 16 15	19	18	19	21 20	10	50 40	50
	4		4	16 15 14		14 13 12		14 13 12 11	16	17	15		12 11 10	14 13 12	16	15	14	19 18	12 13	30	45
	3		3	13 12 11		11 10 10		11 10 9 8	14	12	13		9 8 7	11 10 9	13	12	13	17 16 15	14 15	20	40
	2		2	10 9 8		9 8 7		9 8 7 6	10	8	9		6 5	8 7	10	9	11	14 13 12	16 17 18	10 5	35
	1		1	7 6		6 5		6 5 4	6	5	6		4 3	6 5	7	8	11 10 9	19 20		30	
0		0	5 3 2 1		4 3 2 1		4 3 2 1 0	3	3	4		2 1 0	4 3 2 1	4	5	8 5 2	21 23 25	1	25		
							M F						M F					M F			

FIGURE 1

x ——— x Females, Bloomfield Data 0 ——— 0 Females, GZ Data
 x - - - x Males, Bloomfield Data 0 - - - 0 Males, GZ Data

TABLE 6

Means and Standard Deviations of the Trait Scores

Guilford-Zimmerman Data and Present Study

Trait	Means						Standard Deviations					
	Men		Women		Both		Men		Women		Both	
	GZ	Bloom-field	GZ	Bloom-field	GZ	Bloom-field	GZ	Bloom-field	GZ	Bloom-field	GZ	Bloom-field
G	17.0	17.6	17.0	16.3	17.0	16.82	5.64	5.49	5.20	5.12	5.46	5.3
R	16.9	19.2	15.8	18.4	16.4	18.4	4.61	4.59	4.73	4.16	4.89	5.22
A	15.9	16.9	13.7	13.2	15.0	14.7	5.84	5.82	5.52	5.24	5.82	5.65
S	18.2	17.5	19.6	19.2	18.8	17.9	6.97	6.98	6.33	5.62	6.56	6.69
E	16.9	16.8	15.5	14.5	16.3	16.1	6.15	6.17	5.76	5.80	6.02	6.12
O	17.9	16.8	16.8	15.1	17.4	16.9	4.98	5.41	5.37	5.28	5.18	5.42
F	13.8	13.4	15.7	15.7	14.6	15.1	5.07	4.73	4.79	4.75	5.06	5.18
T	18.4	19.6	18.1	19.8	18.2	19.7	5.11	4.53	4.70	4.59	4.90	4.9
P	16.7	14.4	17.6	15.9	17.1	15.4	5.05	4.66	4.88	5.34	5.00	5.10
M	19.9	18.1	10.8	10.1	16.1	14.9	3.97	4.90	4.12	4.61	6.05	5.35
N=	523*	71	389*	66	912	137*	523	71	389*	66	912*	137

* For all except T score, for which N's were 116, 136 and 252.

TABLE 7
 Analysis of Variance
 Sex X Conflict

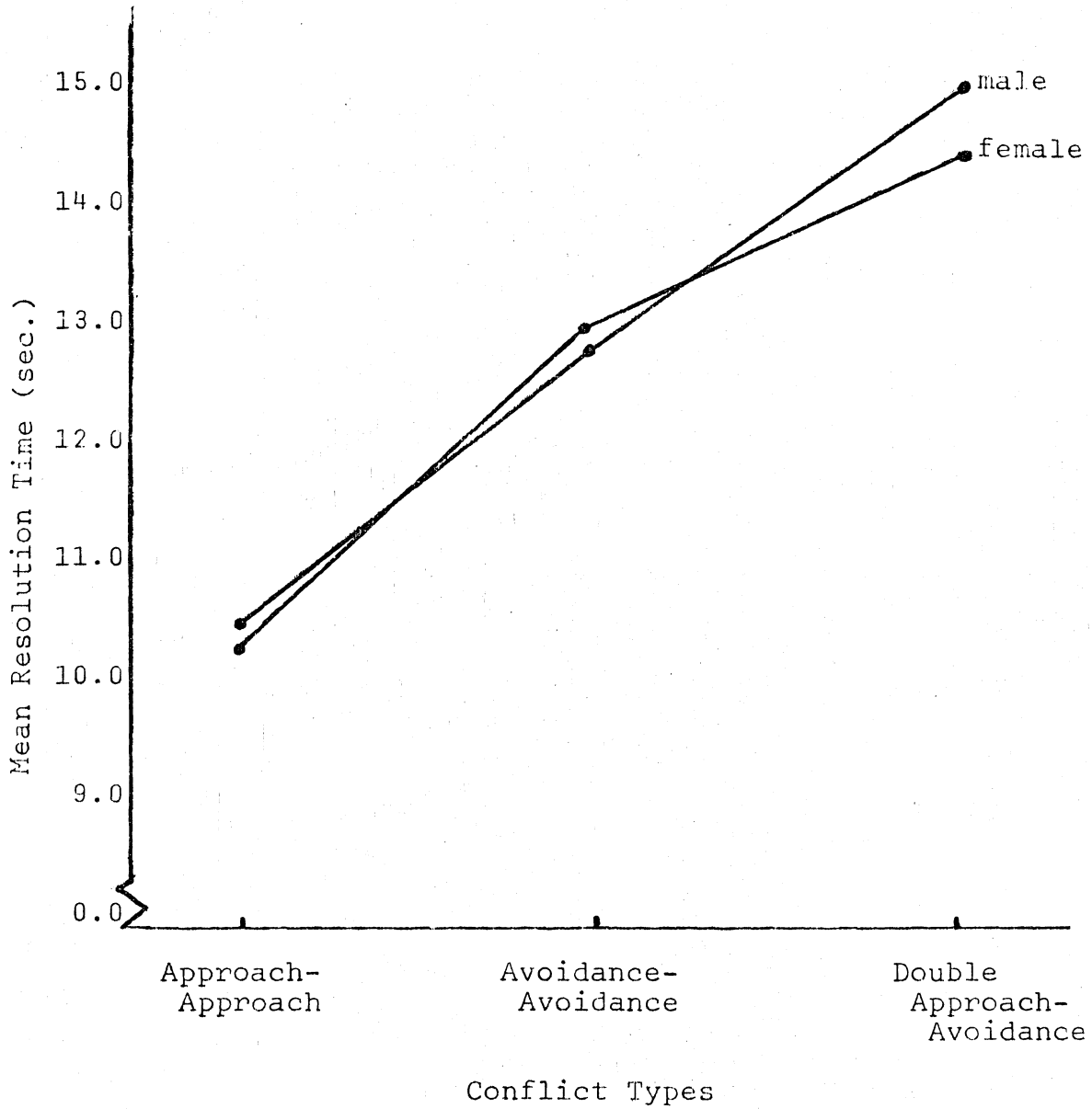
Summary Table

<u>Source</u>	<u>SSQ</u>	<u>df</u>	<u>MSQ</u>	<u>F</u>
A	2285.226	1	2285.226	37.340*
Subj. w. group (error) (a)	8262.009	135	61.200	
B	2161.329	2	1080.664	204.398*
AB	4592.207	2	2296.103	434.288*
B X Subj. w. group (error) (b)	1427.503	270	5.287	

FIGURE 2

Speed of Verbal Conflict

Resolution for male and female Ss



A simple effects test (Table 8) on the Sex X Conflict interaction indicated that for DAP-AV conflict types only, the sex differences were significant. A second simple effects test (Table 8) indicated that for males there were significant differences among conflicts

Insert Table 8 about here

and significant among conflicts for females also. A Newman-Keuls Test (Table 9) indicated that all conflict types differed significantly from each other in both males and females.

Insert Table 9 about here

In order to replicate the second part of Fracher's experiment (1972), the top and bottom 15% of the TMAS scores of the original 137 Ss and their corresponding conflict scores were selected to be used in a 2 x 3 ANOV, Drive X Conflicts, repeated on Conflicts (Table 10). The top 15% of the TMAS scores were designated as

Insert Table 10 about here

indicating high drive Ss (HD), and the lower 15% were designated as indicating low drive (LD) Ss (Taylor, 1956). Table 11 indicates the number of males and females in HD and LD conditions, and the means, standard deviations, and ranges of these conditions.

TABLE 8

Sex X Conflict Analysis of Variance
Simple Effects

Males	744.506	895.665	1058.610	n = 71
Females	685.938	840.180	935.814	n = 66

<u>Source</u>	<u>df</u>	<u>MSQ</u>	<u>F</u>
Sex at AP-AP	1	25.125	1.062
Sex at AV-AV	1	22.553	.953
Sex at DAP-AV	1	110.486	4.669*
SSQ w. cell	409.5	23.662	
Conflicts at Male level	2	361.567	68.383*
Conflicts at Female level	2	232.905	44.052*
B X Subj. w. groups		5.287	

*p < .05

harmonic mean = 68.25

TABLE 9

Newman-Keuls Tests of Differences Between
Conflict Means for Males and Females

<u>Males</u>				<u>Females</u>					
		AP-AP	AV-AV	DAP-AV			AP-AP	AV-AV	DAP-AV
		10.486	12.615	14.910			10.393	12.730	14.179
AP-AP	10.486		2.219*	4.424*	AP-AP	10.393	-	2.337*	3.786*
AV-AV	12.615		-	2.295*	AV-AV	12.730		-	1.149
DAP-AV	14.910			-	DAP-AV	14.179			-

	$\frac{r = 2}{2.27}$	$\frac{r = 3}{5.31}$
q		
(r, 270)		
\bar{s}_q	.447	1.07
B(r, 270)		

$$\bar{s}_B = \sqrt{\frac{MS_{error}/b}{np}} = .197$$

* p < .05

TABLE 10
 ANOV Summary Table
 Drive X Conflict

<u>Source</u>	<u>SSQ</u>	<u>df</u>	<u>MSQ</u>	<u>F</u>
A	390.301	1	390.301	5.212*
Subj. w. group	2920.349	39	74.881	
B	477.225	2	238.612	47.039*
AB	178.401	2	89.200	175.847*
B X Subj. w. group	395.664	78	5.072	

Insert Table 11 about here

The ANOV yielded a significant Drive X Conflict interaction
($F_{2,78} = 175.85, p .05$) which is presented graphically in Figure 3.

Insert Figure 3 about here

A simple effects test was performed which indicated that for all three types of conflicts, drive level was not significant (Table 12). A second simple effects test indicated that there were significant differences among conflicts at both drive levels (Table 12).

Insert Table 12 about here

A Newman-Keuls Test of significant differences among cell means indicated that at both HD and LD, all conflict types were significantly different from each other (Table 13).

Insert Table 13 about here

DISCUSSION

The four multiple regressions, although insignificant, deserve

TABLE 11

High Drive and Low Drive Group TMAS
Means, Ranges and Standard Deviations

	Low Drive n = 20	High Drive n = 21
Mean	5.25	32.190
Range	3 to 7	26 to 37
Standard Deviation	1.292	3.747

FIGURE 3
Speed of Verbal Conflict
Resolution for HD and LD Ss

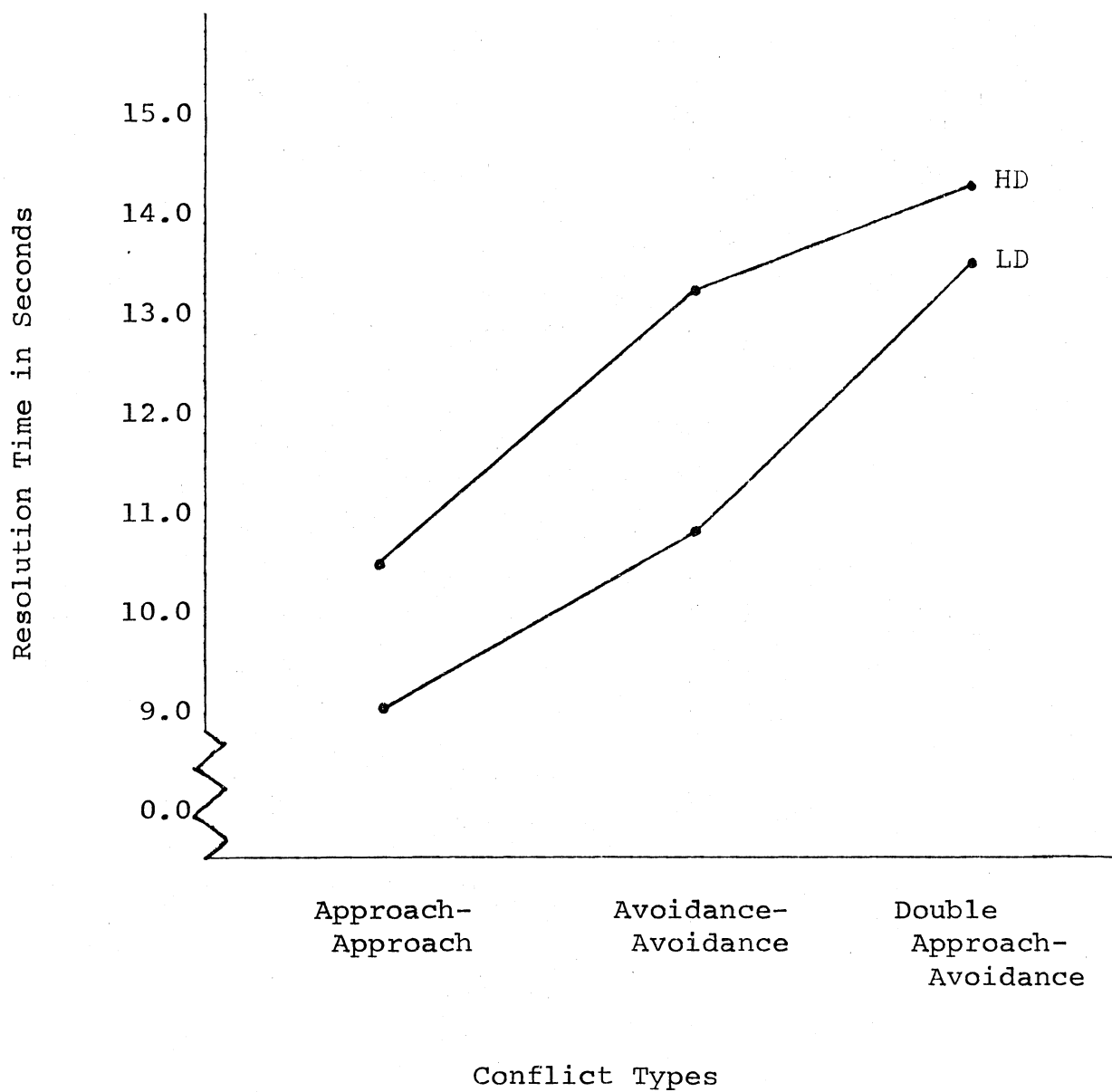


TABLE 12
 Drive X Conflict Analysis of Variance
 Simple Effects

	AP-AP	AV-AV	DAP-AV	
(cell sums) HD	221.823	275.268	300.846	n = 21
(cell sums) LD	183.860	216.860	267.220	n = 20

<u>Source</u>	<u>df</u>	<u>MSQ</u>	<u>F</u>
Drive at AP-AP	1	35.310	1.240
Drive at AV-AV	1	83.582	2.935
Drive at DAP-AV	1	27.702	.973
SSQ w. cell	116.4	28.476	
Conflicts at HD	2	79.668	15.707*
Conflicts at LD	2	86.358	17.026*
B X <u>Ss</u> w. Groups	78	5.076	

significant at $p < .05$

harmonic mean = 20.408

TABLE 13

Newman-Keuls Tests of Differences Between
Conflict Means at High and Low Drive

<u>High Drive</u>				<u>Low Drive</u>					
		AP-AP	AV-AV	DAP-AV			AP-AP	AV-AV	DAP-AV
		10.563	13.108	14.326			9.193	10.843	13.361
AP-AP	10.563	-	2.54*	3.76*	AP-AP	9.193	-	1.650*	4.168*
AV-AV	13.108		-	1.21*	AV-AV	10.843		-	2.51*
DAP-AV	14.326			-	DAP-AV	13.361			-

$$q \begin{matrix} \underline{r = 2} & \underline{r = 3} \\ 2.83 & 3.40 \end{matrix} \\ (r, 78)$$

$$\bar{s} \begin{matrix} .987 & 1.18 \end{matrix} \\ B (r, 270)$$

$$\bar{s} = \sqrt{\frac{MS_{error}/B}{np}} = .3525$$

* $p < .05$

some comment. It was discouraging that even the TMAS scores did not contribute, in multiple regression form, to the variance in resolution times. Even by simple r 's, TMAS and resolution time failed to correlate, contrary to an implication by Fracher (1972) in his discussion. It is possible that the TMAS scores were not widely distributed enough to contribute to a significant multiple R , although the TMAS scores in this study do not differ markedly when range and medians are compared with Taylor's scores (1951). The plausibility of this explanation comes from consideration of the Drive X Conflict ANOV mentioned in the results. It will be recalled that Taylor (1956) indicated that HD and LD individuals may be identified in the top 15% and lower 15% of the TMAS score distribution only. When Taylor's procedure was applied to the TMAS scores in this study and then an ANOV performed on top and bottom 15% TMAS and all Conflict scores, a significant interaction was found. Since significance was demonstrated with the TMAS scores when analyzed by the above procedure, it could be possible that if a similar procedure were followed with each of the GZTS scores, significant results would be found by ANOV's.

The validity of the GZTS should not be questioned. Inspection of Figure (1) indicates that the sample tested for this study showed no marked deviations compared to Guilford and Zimmerman's normative data (Guilford and Zimmerman, 1949, p.7). Comparison of the inter-correlation matrices of this study with those of Guilford and Zimmerman (1949, p.7), as far as is logically possible, indicated no flagrant differences. However, while the GZTS is a stable

instrument of personality measurement, perhaps verbal conflict resolution is more of a situational phenomenon. Hence, Conflict Resolution cannot be related to a personality test.

Other procedural changes from Fracher's (1972) and Powell's (1971) study were justified. It is not clear what kind of timing instrument and procedure Powell used. Disguising the measurement of resolution time in the instructions to the Ss and using a hidden silent timer did not alter the resolution times of all three conflict types relation to each other, albeit all three conflict types were resolved more slowly in this study than in Powell's or Fracher's. In Fracher's procedure, Ss were explicitly told to disregard a digital timer which they could hear when it was in operation. It was felt that telling college Ss to disregard the presence of a timer, i.e., that time is of the essence, has a reciprocal effect of the Ss's performance. The Ss become extremely time conscious and perform as if time the only important variable, and not the conflict resolution process.

After this study was completed, it was pointed out that perhaps those Ss who were initially eliminated because of excessive question marks on the GZTS (greater than 4 on any one column) were actually persons who were avoiding a yes or no conflict situation by responding with a question mark answer. Consequently, the GZTS and TMAS scores of the above individuals were related in multiple regressions to their conflict resolution times. Those four R's are presented in Appendix A along with a discussion of the results.

The first ANOV mentioned in the Results, Sex X Conflict, indicated that for both males and females, all three types of con-

flicts differed from each other, AP-AP being the easiest to resolve, DAP-AV conflicts being the most difficult. These results verify the work of Hovland and Sears (1939), Arkoff (1957), Powell (1971) and Fracher (1972, 1973). The significant sex differences at the DAP-AV conflict type, although small, cannot be readily or convincingly explained. Several plausible explanations can be offered, however. The first could be through the adjectives used to form the conflicts. They were the same as those used by Powell, who determined that the adjectives were high in personal desirability by college females at the University of Richmond about two years ago. Fracher (1972) subsequently used the same adjectives in his study. In that this study used both males and females, perhaps the initial selection of the adjectives explains the significant difference; the adjectives may not be as high in desirability by males. Or, it could be that even college females today would find some of the adjectives no longer paramount in desirability.

A second explanation of the significant sex differences could lie purely within the statistical realm. The large degrees of freedom in the error term, particularly when pooled for analyses across the Sex factor in the simple effects test, is quite large (409). The result is a reduced Mean Square value for the error term, which in turn produced large F values. In short, the significant sex difference could be statistical anomaly, having no practical significance.

The second ANOV mentioned in the results of this paper, i.e., Drive X Conflict, did not allow this writer to conclude for verbal conflict resolution what Fracher (1972) attempted to conclude. That

is, "the theoretical implication seems to be that, regardless of the underfined motor or cognitive processes involved in conflict resolution, the fact that an individual has a relatively high level of generalized drive apparently increases the amount of time required in the conflict resolution process as compared to low drive individuals." Also, for both high drive and low drive individuals, AP-AP conflicts were resolved the fastest, followed by AV-AV conflicts, which were followed by DAP-AV conflicts. Although the present study did not follow one of the procedures recommended by Fracher (1972) for correcting for reading time differences between AV-AV and AP-AP conflicts compared to DAP-AV conflicts, e.g., covarying reading times of Ss, reading the conflicts to the Ss, or presenting conflicts tachistoscopically, it is felt by this researcher that this reading time differential was effectively eliminated.

Overlooked, however, in the Drive X Conflict ANOV was the fact that in each Drive Group the sexes were not equal, even though small significant sex differences were established in the Sex X Conflict ANOV. To counter this, a second Drive X Conflict ANOV, 10 males and 10 females in each Drive Group, selected from the top and bottom 15% of the original 137 Ss, was performed. The results of this ANOV and a discussion are presented in Appendix B.

Several areas of follow-up research were illuminated during the process of collection and analysis of the data for this study. They include:

1. A repetition of the present study using conflict resolution performance over several months instead of that gathered in a single sitting. If conflict resolution is a situational measurement of

personality, while GZTS scores are not, perhaps an average of conflict performance over time would relate to significant profiles as defined by the GZTS.

2. A re-evaluation of the adjectives used to form the conflicts in this study is also suggested. The adjectives used in this study, as mentioned before, were used by Powell and Fracher, and of necessity again for purposes of replication and confirmation of Fracher after a procedural replication. The adjectives are two years old, and possibly only applicable to college females. Several Ss told this E that they could not distinguish between some of the pairs of adjectives, e.g., honest and sincere. Some automatically opted for the healthy adjective if in a conflict, because they were physical education majors, overly concerned with bodily health. Perhaps the adjectives are already outdated or that they are biased sexually. Hence, it is a possibility that different adjective pairs should be used for males compared to females in conflict resolution.

3. The methodology of this study should be combined that of Powell's (1971) study to examine the effects of modeling on the behavior of LD and HD Ss in conflict resolution. A modeling scheme similar to that of Powell, using the apparatus used in this study, could be devised to examine the extent to which the verbal conflict resolution behavior of HD and LD Ss can be modified.

4. Finally, perhaps the GZTS did not tap those personality factors which relate to conflict resolution. The writer suggests that perhaps the Minnesota Multiphasic Personality Inventory (MMPI) could be employed as the GZTS was in this study. It has been previously pointed out that the MMPI is almost a diametric opposite of

the GZTS. It is possible that this differently directed, more clinically oriented test is what is needed to identify personality profiles which predict verbal conflict resolution performance.

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Appendix A

Results and Discussion

The GZTS and TMAS scores of the 56 Ss initially eliminated because of greater than 4 question marks on any one GZTS factor were correlated via multiple regression with AP-AP, AV-AV, DAP-AV and TOT conflicts each as a dependent variable. The regressions involving AP-AP, DAP-AV, and TOT conflicts as dependent variables were significant. The regression constant, variable weights, proportion of dependent variable variance accounted for by each independent variable, and F value of the entire regression are presented in Table 13.

The GZTS P factor consistently accounts for the largest proportion of variance in each dependent variable with significant negative Beta weights in all three significant regression equations. Factors M and S account for smaller amounts in all three R's also with negative B weights. A is significantly weighted in the AP-AP and TOT R's as is the F factor.

Insert Table 13 about here

Even though the GZTS scores used in the regressions in this appendix are those of Ss who had a high number of question mark responses, experience has shown (Overton, 1973) that question mark (?) responses are generally evenly distributed over all factors. Consequently, the profile which emerges is similar to that which would be found if Ss were forced to respond either yes or no, although it is lower. It is possible, then, to make a rough inter-

TABLE 13
Multiple Regression Equations
High Question Mark (?) Ss

1. AP-AP Conflicts

<u>Variable</u>	<u>Regression Weight</u>	<u>t Value of Weight*</u>	<u>Proportion of Variance in dep.var Accounted for by the Variable</u>
P	- 1.80	- 1.65	.103
A	.392	3.36	.061
M	- .254	- 2.94	.064
S	- .230	- 2.27	.072
F	.226	1.91	.051

Regression constant = 14.260

R = .63520

F_{.95} (12,43) = 2.42**2. DAP-AV Conflicts

P	- .483	- 2.24	.179
M	- .360	- 2.11	.033
S	- .381	- 1.91	.023

Regression constant = 2.0036

R = .5988

F_{.95} (12,43) = 2.0036**3. TOT Conflicts

P	- .317	- 2.00	.143
A	.526	3.12	.045
M	- .347	- 2.77	.003
S	- .321	- 2.19	.065
F	.304	1.78	.048

Regression constant = 19.567

R = .64224

F_{.95} (12,43) = 2.5156***-Significant at $p < .05$, one tailed test.**-Significant at $p < .05$.

pretation of the personality profile of high question mark (?)
Ss vis-a-vis their conflict resolution.

Guilford and Zimmerman (1949) speculate that a person with a high P score indicates tolerance and understanding of other people; a low score indicates fault finding and criticalness of other people and institutions; a high M score indicates that the person behaves in a way characteristic of men and therefore is better accepted and understood by them. An extremely high M score may be indicative of an unsympathetic or calloused individual, or a male trying to compensate for feminine tendencies. Women who score toward the masculine end of this factor may be doing so because of masculinizing experiences through long associations with men or they may be rebelling against the female role. It should be born in mind that the M scale as listed in this regression is invalid for two reasons: (1) the score is interpreted in opposite directions for males and for females. Higher scores for men are desirable, lower for women. Since the regressions include males and females, interpretation of the M factor significance regarding conflict resolution is confounded, (2) the scale reflects masculinity/feminity concepts of the late 1940's and 1950's. Certainly the impetus of the current Women's Rights Movement of the late 1960's and 1970's would affect interpretation of the scale.

An S score reflects sociability; a high score reflects a person at ease with others, easy to get to know, while a low score indicates a withdrawn, hard to get to know individual. The A factor is an index of social boldness, ascendance. A person with a very high A

score would tend to ride roughshod over others. Low A scorers would tend to be submissive.

The GZTS F is an indicator of friendliness. An extremely high score might indicate pacifism, an extreme desire to be liked or please others. A low score indicates a fighting attitude. Many higher ranking executives score below average on the F score.

Based on these interpretations, one could speculate that a personality profile low on P, and S factors would reflect a slow conflict resolver. This prediction would be strengthened if high A and F scores were observed at the same time.

The significance of the P and S factors could also be tied to some sort of S - E interaction. A very rough hypothesis would be that persons scoring high on these traits may interpret speedy resolution as a means of pleasing the E thereby winning his approval. In this study, however, the E was careful to give no indication in his instructions of what type of resolution was desired. During the actual conflict resolution, the E was shielded from the S by the vertical partition of the conflict board.

Appendix A

Results and Discussion

A second Analysis of Variance, Drive X Conflict, repeated on Conflicts, was performed using 10 males and 10 females in each Drive Group (Table 14). These Ss were selected from the top and bottom 15% of the TMAS distribution of the 137 Ss initially selected for the study.

Insert Table 14 about here

The ANOV yielded a significant Drive X Conflict interaction ($F_{2,78} = 112.636, p < .05$). This is shown in Figure 4.

Insert Figure 4 about here

A simple effects test on the interaction indicated that Conflicts were significantly different from each other at both Drive levels. A second simple effects test, however, indicated no significant differences between Drive conditions at any Conflict type (Table 15).

Insert Table 15 about here

A Newman-Keuls Test of significant differences among cell means indicated that at both HD and LD, all conflicts types were significantly different from each other. (Table 16).

TABLE 14
 ANOV Summary Table
 Drive X Conflict
 (sexes equated)

<u>Source</u>	SSQ	<u>df</u>	<u>MSQ</u>	<u>F</u>
A (Drive)	779.535	1	779.535	10.786*
<u>Ss</u> w. Groups	2746.236	39	72.269	
B (Conflicts)	428.949	2	214.474	37.614*
AB	1284.501	2	642.250	112.636*
B X <u>Ss</u> w. Groups	433.346	78	5.701	

* significant at $p < .05$

TABLE 15
 Drive X Conflict ANOV
 Simple Effects

<u>Source</u>	<u>df</u>	<u>MSQ</u>	<u>F</u>
Drive at AP-AP	1	0	-
Drive at AV-AV	1	9.30	.68
Drive at DAP-AV	1	8.28	.609
SSQ w. cell	234	13.588	
Conflicts at HD	2	114.81	20.14*
Conflicts at LD	2	77.16	13.58*
B X <u>Ss</u> w. Groups	78	5.70	

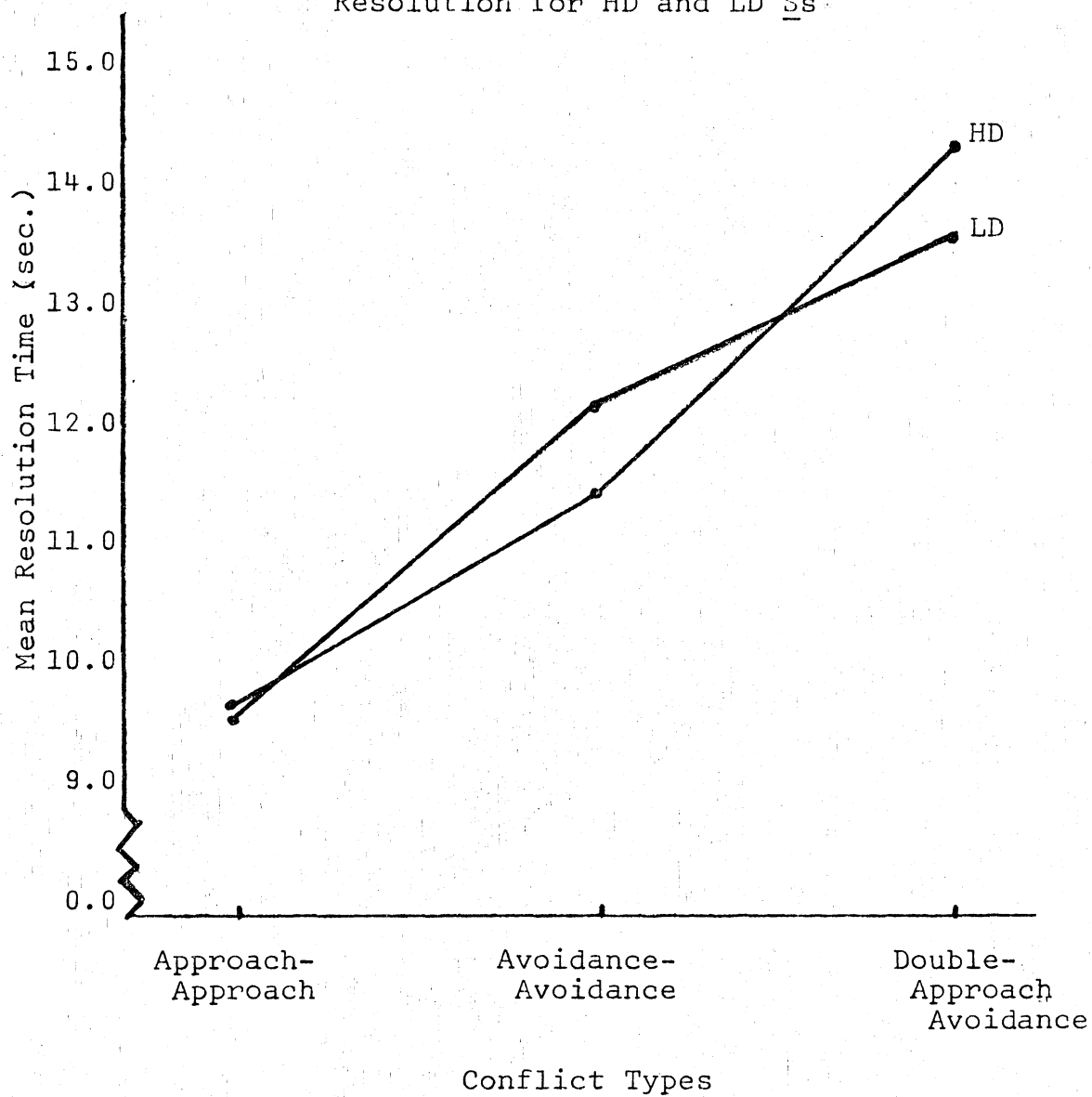
* significant at p .05

cell means

	AP-AP	AV-AV	DAP-AV
HD	9.597	12.278	13.424
LD	9.602	11.314	14.334

FIGURE 4

Speed of Verbal Conflict

Resolution for HD and LD Ss

Insert Table 16 about here

The first Drive X Conflict ANOV in this study (with unequal numbers of males and females), and the ANOV referred to in this Appendix lend no support to Fracher's (1972) results regarding verbal conflict resolution. No difference between Drive levels can be demonstrated in either ANOV for any conflict type.

One consideration could be posited, however, to explain the difference of the results of this study compared to those of Fracher. The instructions in this study explicitly de-emphasized the importance of time in making conflict decisions. Subjects were instructed to take as much time or as little time as they wished. No reference was made to the timer which was concealed from the S. Fracher (1972) specifically told his Ss that they were being timed but that they should pay no attention to the timer. This writer feels that this specific identification of the time aspect of verbal conflict resolution may be what differentiates HD Ss from LD Ss. Future studies in verbal conflict resolution would do well to use time-oriented instruction vs. instructions de-emphasizing the importance of time as a variable in their experimental design.

TABLE 16

Newman-keuls Tests of Differences Between
Conflict Means at High and Low Drive

High Drive

Low Drive

		AP-AP	AV-AV	DAP-AV			AP-AP	AV-AV	DAP-AV
		9.597	12.278	13.424			9.602	11.314	14.334
AP-AP	9.597	-	2.681*	3.827*	AP-AP	9.602	-	1.712*	4.732*
AV-AV	12.278		-	1.146*	AV-AV	11.314		-	3.020*
DAP-AV	13.424			-	DAP-AV	14.334			-

	<u>r = 2</u>	<u>r = 3</u>
$q_{(r,78)}$	2.83	3.40
$\bar{s} B^q_{(r,78)}$	1.07	1.28
p < .05		

$$\bar{s}_B = \sqrt{\frac{MS \text{ error } B}{np}} = .378$$

VITA

Douglass R. Bloomfield was born on December 10, 1942, in Glens Falls, New York. He attended elementary schools in Glens Falls and in 1960 was graduated from Glens Falls High School. In September of the same year he entered Cornell University where he participated in intercollegiate football and majored in economics. He was elected to Scabbard and Blade Military Honorary. In 1964 he graduated from Cornell and was awarded a regular army commission.

After employment as a commodity trader in Ohio and Virginia, teaching and coaching in Norfolk and Chesapeake, Virginia secondary schools, Mr. Bloomfield entered the graduate school of The University of Richmond in September 1971. While at Richmond he was inducted into Psi Chi, National Honorary in Psychology. He presented this paper at the Virginia Academy of Science in May 1973. He expects to receive his Master of Arts degree in August 1973, and will be employed as a clinical psychologist with the Mount Rogers Mental Health and Retardation Services Board in Galax, Virginia.