

## Men and Their Bodies: The Relationship between Body Type and Behavior

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Empirical evidence concerning possible relationships between male body type and men's intelligence, sense of masculinity, and social behavior is reviewed. Particular attention is focused on the muscular male and on whether or not he differs in any important way from the male with a stereotypically less masculine body. The most reasonable conclusion to be drawn from the evidence available is that any association between physique and behavior is very weak, that stereotypical perceptions and expectations cloud the relationships, and that replication and extension of existing work is needed.

For at least two thousand years people have believed that a man's character is revealed by his body. As early as the fifth century B. C. the Greek physician Hippocrates divided men into two physical types, *phthisic habitus* (long and thin) and *apoplectic habitus* (short and thick), and suggested that men with the phthisic physique are particularly susceptible to tuberculosis while apoplectics are predisposed to diseases of the vascular system. Although less systematic in his observations than Hippocrates, Shakespeare's more memorable descriptions of Cassius as "lean and hungry" and Falstaff as indolent and gluttonous are meant to reveal something more profound about these men than their caloric intake. More recently Nichols (1975) suggests that men with muscular bodies have a distinct social advantage over thin or fat men since people have a more positive stereotype of muscular men than of non-muscular men.

All of these authors accept the view that a man's body and his behavior are somehow interrelated, although each assumes a different basis for the relationship. Hippocrates believed that

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a man's behavior was affected by biological "humors" circulating throughout his body; Shakespeare considered a man's body and his behavior both to be expressions of his underlying nature; Nichols sees the body-behavior association to be the result of social stereotypes which link body types with certain behaviors. Putting popular speculation aside, this paper reviews the empirical evidence concerning the possible relationship between body type and men's intelligence, sense of masculinity, and social behavior. Particular attention is focussed on the muscular male and on whether or not he is different in any important way from the male with a "less masculine" body.

### INTELLIGENCE

Ever since Sir Francis Galton observed that men of genius tend to be above average in height and weight (Galton, 1896/1962), researchers have sought to establish the true relationship between men's physical traits and their intelligence. Galton's observation has not been verified by subsequent research which has suggested that when such factors as social class, family size, and birth order are controlled for, any relationship between height or weight and intelligence disappears.

One group of early investigators used as their measure of physique the ratio of height divided by weight, the "morphologic index" (Naccarati, 1921), which essentially classifies men along a continuum from fat to thin. The subjects in these studies were white, middle-class college men, and the sample sizes were usually in the hundreds. The observed correlations between the height/weight ratio and various measures of intelligence are small—Thorndike Examinations Test,  $N = 252$ ,  $r = .13$  (Naccarati & Lewy-Guinzburg, 1922); University of Minnesota Entrance Examination Test,  $N = 500$ ,  $r = .03$  (Heidbreder, 1926); Thorndike Intelligence Examination for High School Graduates,  $N = 204$ ,  $r = .10$  (Garrett & Kellogg, 1928); Otis Self-Administering Test of Mental Ability,  $N = 110$ ,  $r = -.11$  (Klineberg, Asch, & Block, 1934). Donald Paterson (1930) in his thorough and excellent review of this early literature concludes: "Just as with height or weight, and also with anatomical or physiological age, so with morphological index the experimental evidence now available warrants the belief that physical status and mental status are largely independent of one another. . . ." (p. 169).

Researchers who had been defeated in their quest to find a simple relationship between height or weight and intelligence

moved to the more complex hypothesis that a man's physique, the shape of his body, might be related to his intelligence and to other aspects of his behavior. A variety of typologies have been proposed to classify physique, the most notable and widely researched being William Sheldon's (1940, 1942, 1949, 1954). Sheldon and his co-workers developed a highly objective and reliable technique for classifying men's physiques. Sheldon argues that a man's physique can be described in terms of the relative presence of three physical components: *endomorph*y—soft and round with a highly developed digestive viscera, *mesomorph*y—hard and rectangular with a predominance of muscle and bone, and *ectomorph*y—linear and fragile with a flat and delicate body. Based on information obtained from standardized photographs, a man's physique can be assigned a somatotype, which is the degree of presence of each of the three components of physique and is expressed as a three digit number. (For the reader unfamiliar with Sheldon's system, a good review of his theory and the research that his work has stimulated can be found in Hall and Lindzey, 1970.)

A number of studies have examined the relationship between intellectual ability and endomorphy, mesomorphy, and ectomorphy. The results of these studies (see Table 1), generally suggest that there is little if any consistent relationship between

TABLE 1  
CORRELATIONS BETWEEN PHYSIQUE AND MEASURES OF INTELLECTUAL ABILITIES

Study	(N)	Endomorphy	Mesomorphy	Ectomorphy
Sheldon (1942)				
IQ	(110)	.07	-.07	.19
Child & Sheldon (1941)				
SAT Verbal	(518)	.00	.01	.09*
SAT Math.	(518)	-.04	-.10*	.08
Smith (1949)				
Thurstone Verbal	(105)	.05	-.32*	.25*
Thurstone Reasoning	(87)	-.02	.01	.05
Thurstone Space	(85)	-.11	.06	.03
Thurstone Memory	(90)	.04	.06	.01
Davidson, McInnes, & Parnell (1957)				
Stanford Binet	(50)	.31*	.01	.19
WISC Non-verbal	(50)	-.03	.15	—
WISC Verbal	(50)	-.06	-.35*	.34*

Note. The Davidson et al. study measured 7-year-old boys; the other three were college populations.

\* $p < .05$

intellectual ability and somatotype. The most that can be said from these data is that a small positive relationship may exist between verbal ability and ectomorphy, although the size of that relationship is not very large (see also Parnell, 1958).

A recent study by Petersen (1976) examined the relationship between physique, as measured by Bayer and Bayley's (1959) "somatic androgyny" scale, and cognitive ability. The physical development of 35 males aged 13, 16, 18 years was rated on a scale from extremely masculine to extremely feminine. In addition, spatial ability and word fluency were assessed using tests from the Wechsler-Bellevue and Primary Mental Abilities Test. The results indicate that 16- and 18-year-old boys with the most masculine bodies perform better on word fluency tests than on spatial tests, while the reverse is true for boys with feminine bodies. These results disagree with Bayley's (1951) own findings of no significant relationship between somatic androgyny and Stanford-Binet scores at 14-15 years or Wechsler-Bellevue at 18 years, and, in addition, these findings contradict the previously summarized data and indicate the inconsistent and unreliable nature of the relationship between physique and intelligence.

Kagan (1966) investigated a related aspect of intelligence, cognitive style, and examined the relationship between body build and impulsivity-reflectivity in children. Impulsivity-reflectivity is measured by asking children to select from a group of pictures the one picture that matches a standard; impulsive children make their choices quickly and are usually wrong, while reflective children deliberate longer and are usually correct. The data indicate that body build is not related to this aspect of cognitive style for first-grade boys, but third- and fourth-grade boys who are tall and narrow (ectomorphic) are more likely to be reflective and boys in these grades who are short and wide (endomorph) are more likely to be impulsive. Kagan suggests that this developmental difference may be the result of the increasing importance of stature for males, such that a height anxiety in boys who are short and fat produces a tendency toward impulsivity.

Two studies which examined the relationship between physique and career interests indirectly bear on the general issue of physique and intelligence. Seltzer (1945) classified 253 college men into two groups according to the degree that their physiques possessed a "masculine component," defined as a body build that was "angular, rough surfaced, narrow-hipped and well-muscled." Of men whose masculine component was strong, 33% were majoring in natural sciences, 41% in social sciences, and 26%

in arts and letters; by comparison, for the weak masculine men, 11% were majoring in natural sciences, 30% in social sciences, 59% in arts and letters. Although tests of significance were not performed, the data suggest that important differences do exist. Seltzer also found that men with a weak masculine component achieve higher scores on the Alpha Verbal test ( $\bar{X} = 190$  vs. 182) and the Scholastic Aptitude Test ( $\bar{X} = 629$  vs. 599), while men with a strong component perform better on the Alpha Number test ( $\bar{X} = 164$  vs. 158) and the Mathematical Attainments Test ( $\bar{X} = 583$  vs.  $\bar{X} = 550$ ). In another investigation of career interests, Deabler, Hartl, and Willis (1975) somatotyped 300 males who were also administered the Strong Vocational Interest Test. Of the 180 possible correlations, 71 are significant. The highest positive correlations for each somatotype are .17 for endomorphy and senior CPA, .31 for mesomorphy and aviator, and .19 for ectomorphy and school superintendent.

Finally, Cortes and Gatti (1966) looked at the relationship between physique and need for achievement ( $n$  Ach) in adolescent boys. The physiques of 100 non-delinquent and 100 delinquent boys were classified according to Parnell's (1958) technique which considers the basic components of physique to be fat, muscularity, and linearity. The correlations between physique and  $n$  Ach for the non-delinquents and delinquents are: for fat, .16 and .01 for muscularity, .35 and .20; and for linearity,  $-.27$  and  $-.06$ . The correlations for muscularity and  $n$  Ach are both significant.

### MASCULINITY

The concepts of masculinity and femininity and the numerous attempts to measure them have been reviewed and evaluated by Constantinople (1973); the reader is referred to that paper for background information for this section. It is enough to point out for our purposes that the selection of items for tests of masculinity-femininity has not been based on any systematic conception of what "maleness" or "femaleness" is, but on an empirical search for items that, for whatever reason, distinguish male from female respondents. It is not surprising; therefore, that most of these scales, such as the Terman-Miles M-F test (Terman & Miles, 1936), contain many items that have to do with sports and activities that involve vigorous physical exertion, since these kinds of activities are more traditionally engaged in by males than by females. Given a test constructed in such a way, one would expect a strong and consistent relationship between

masculinity and such physical characteristics as height, strength, and mesomorphy. The research does not confirm this hypothesis.

Two early studies examined the relationship between masculinity and various measures of physique. Terman and Miles (1936) correlated scores from their M-F test obtained from a group of 106 college men with a number of measures of physique such as hip width, shoulder width, weight, and sitting height. The magnitude of all these correlation coefficients is small and Terman and Miles conclude that "one can only say that if there is any correlation between [M-F] score and any of the physical measures we have used it is probably not very large" (p. 86). Another study also used an early version of the Terman-Miles M-F test and found that for a group of college men, M-F scores are negatively correlated with the highness of voice pitch ( $r = -.34$ ) and unrelated to either hip and shoulder size or amount of body hair (Gilkinson, 1937).

Six studies have specifically examined the relationship between somatotype and masculinity. Child and Sheldon (1941) employed Sheldon's system and, in addition, identified a secondary component of physique, gynandromorphy, defined as "the relative predominance of physical characteristics of the opposite sex" (such as a broad pelvis and long eyelashes). College men ( $N = 518$ ) were administered the Terman-Miles M-F test and the following correlations were obtained between physique and masculinity: for endomorphy,  $-.10$ ; for mesomorphy,  $.12$ ; for ectomorphy,  $-.03$ ; and for gynandromorphy,  $-.21$ . None of these correlations are significantly different from zero; however, the significant difference between the correlations for mesomorphy and gynandromorphy suggests that muscular men have more masculine interests than men with female-like bodies.

Two studies employed the method of classifying physiques developed by Bayley and Bayer (1946), which was designed to assess degree of "somatic androgyny." Bayley (1951) administered the Kuder Interest Record to a group of adolescent boys whose physiques were classified as either bisexual masculine, hypo-bisexual masculine, hypomasculine, masculine, or hypermasculine. No relationship was found between physique and masculine interests, and the author concludes that "the outstanding fact in these adolescents . . . is that the two series of variables are largely independent of each other" (p. 59). A second study using Bayley and Bayer's somatic androgyny technique of classifying physiques examined the sex-appropriateness of play among preadolescents (Honzik, 1951). Differences in the selection and use of sex-typed

toys was generally not found to be related to somatic androgyny.

Biller and his associates have examined the relationship between physique and three aspects of sex-role: adoption (based on behavioral ratings), preference (M-F scores obtained from objective tests such as personality questionnaires and toy preference tests), and orientation (M-F scores from projective tests). In the first study to investigate the possible relationship between physique and these three aspects of sex-role, Biller (1968) found that for a sample ( $N = 186$ ) of boys in kindergarten, sex-role adoption—as measured by teacher ratings of such behaviors as “is active and energetic” “leads other children,” “participates in sports”—is significantly correlated with height (.17) and chest girth (.27). Scores on the toy preference test (preference) and on Draw-a-Person and It Scale measures (orientation) are not associated with any aspect of physique. In addition, boys who are tall-broad or short-broad are rated by teachers as significantly more masculine than boys who are tall-thin or short-thin.

In a second study, Biller and Liebman (1971) selected from a group of 98 ninth-grade boys 39 whose physique could be clearly classified as endomorphic, mesomorphic, or ectomorphic (a procedure at variance with Sheldon's technique of rating an individual's physique on each of the three primary components). The boys were also administered a 60-item sex-role preference test composed of questions selected from the M-F scale of the MMPI and the Fe scale of the California Personality Inventory (CPI), and were rated by teachers on a 10-item masculine behavior scale and a 10-item feminine behavior scale. The results indicate that teachers rate mesomorphic boys as more masculine (e.g., active and energetic) than ectomorphic boys, who are in turn rated as more masculine than endomorphic boys. Whether or not this finding actually indicates that mesomorphic boys are more masculine in their behavior than other boys, it is interesting and important since it suggests that teachers perceive mesomorphs as more masculine. Interestingly, teachers also rate mesomorphs as more feminine (e.g., sensitive to other's feelings) than boys with either of the other two physiques, suggesting that mesomorphs may simply be perceived by teachers as more socially competent. In regard to the sex-role preference test, ectomorphs receive significantly higher scores than mesomorphs, with endomorphs between the two. The findings that ectomorphs have higher masculine interest scores than mesomorphs contradicts data gathered from other investigations of the relationship between physique and masculinity, and may be due to the unusual way in

which subjects in this study were chosen and classified. The more interesting possibility, however, is that ectomorphic adolescents may try to overcompensate for their unmasculine physiques by claiming a high degree of interest in masculine activities or pursuits, or perhaps by denying any interest in feminine pursuits.

A recent investigation by LaVoie and Andrews (1976) essentially attempted to replicate the Biller and Liebman (1971) study for 3- to 9-year-old children. Their findings indicate that physique as assessed by the ponderal index, which is found by dividing the individual's height by the cube root of his weight, is not related to sex-role adoption, preference, or orientation for this age group.

### BEHAVIORAL RATINGS

#### *Temperament*

A number of studies have examined the relationship between physique and temperament. Two early studies by Klineberg and his co-workers (Klineberg et al., 1934; Klineberg, Fjeld, & Foley, cited in Anastasi, 1958) found few significant differences on a variety of tests of emotional adjustment and personality between men who had been classified as either *pyknic* (short and thick) or *leptosomic* (tall and slender) based on Kretschmer's (1925) typology.

Sheldon (1942) investigated the association between physique, as determined by his own method of somatotyping, and temperament. Through introspection and intuition, Sheldon identified three clusters of traits which he considered to be three basic temperaments: *viscerotonia*—a tendency towards relaxation and physical comfort, and a pleasure in eating and socializing; *somatotonia*—a tendency towards assertiveness and dominance, and an enjoyment of physical adventure and exercise; and *cerebrotonia*—a tendency towards restraint in movement and emotional expression, and a love of privacy. Sheldon both somatotyped 200 university men and rated them on his Scale of Temperament based on his observations of and interviews with them over a five-year period. The results (Table 2) indicate a significant relationship between physique and temperament, although the fact that Sheldon judged both characteristics undoubtedly results in an artificially high correspondence between these two variables.

Two subsequent investigations eliminated the possible biasing of a "halo effect" by having the experimenter judge physique while the subject rated his own temperament. In two studies,

TABLE 2  
CORRELATIONS BETWEEN PHYSIQUE AND MATCHING TEMPERAMENT

Study	(N)	Endomorphy and Viscerotonia	Mesomorphy and Somatotonia	Ectomorphy and Cerebrotonia
Sheldon (1942)	(200)	.79**	.82**	.83**
Child (1950)	(414)	.13	.38**	.27*
Cortes & Gatti (1965)	(73)	.32*	.42**	.31*

*Note.* Average age of Cortes and Gatti subjects was 17.5; the other studies were of college students.

\* $p < .01$

\*\* $p < .001$

adjective check lists based on Sheldon's Temperament Scale were administered to college men (Child, 1950) and adolescent boys (Cortes & Gatti, 1965). Although the correlations between somatotype and self-reports of temperament obtained in these studies (Table 2) are not as high as Sheldon's original findings, these data do suggest that an association exists between physique and self-descriptions of temperament. For example, Cortes and Gatti (1965) found that endomorphs most often rate themselves as kind, relaxed, warm, and soft-hearted; mesomorphs as confident, energetic, adventurous, and enterprising; and ectomorphs as detached, tense, shy, and reserved. In a study examining differences among adolescents in social self-concept (Washburn, 1962), the findings indicate that mesomorphs are significantly more likely than other boys to rate themselves as dominant (e.g., "I like giving directions to others"). All of these findings suggest that to some extent males with different physiques describe themselves in characteristically different ways, with the strongest association between mesomorphy and the traits of assertiveness and dominance.

### *Social Behavior*

In contrast to the previous studies in which subjects were asked to rate their own behavior, a number of investigators have examined the relationship between physique and behavioral ratings obtained from teachers, parents, and friends. Two studies by Walker (1962, 1963) looked at a variety of social behaviors among preschool boys. In the first study, 73 boys aged 2 to 4 years were somatotyped and their behaviors were rated by preschool teachers using a behavioral check-list (Walker, 1962). Nine

clusters emerged when the 63 items comprising the check-list were cluster analysed. A significant correlation ( $r = .28$ ) was obtained between endomorphy and the cluster score, aggressive/assertive. Mesomorphy was significantly correlated with energetic/active ( $r = .39$ ), alert/curious ( $r = .27$ ), aggressive/assertive ( $r = .48$ ), fearful/anxious ( $r = -.30$ ), social/friendly ( $r = .33$ ), excitable/unstable ( $r = .30$ ), cooperative/conforming ( $r = -.24$ ), and cheerful/expressive ( $r = .23$ ); ectomorphy with aggressive/assertive ( $r = -.40$ ) and cooperative/conforming ( $r = .23$ ). A second study (Walker, 1963) correlated the type of physiques of 2- to 4-year-old boys ( $N = 82$ ) with mothers' behavioral ratings and found many fewer significant relationships than in the previous investigation. Of the 24 correlation coefficients obtained from eight cluster scores and three somatotypes, only two are significant: Mesomorphy correlated significantly with social/friendly ( $r = .23$ ) and cheerful/expressive ( $r = .24$ ). Although these two studies are not entirely in agreement, both teachers and parents apparently perceive a small positive relationship between mesomorphy and what again might be called social competency.

Davidson et al. (1957) somatyped 50 boys aged seven and interviewed the mothers about their sons' behavior. Although significance tests were not performed, the findings suggest that in comparison to boys with other physiques, ectomorphs show the most behavioral disturbances. Ectomorphs are described by their mothers as high in anxiety, emotional unrest (as indicated by such behaviors as temper tantrums, thumb-sucking, and teeth grinding), and the occurrence of nightmares; they are also described as submissive and suspicious.

Hanley (1951) investigated the relationship between physique and behavioral ratings by classmates in two groups of junior high school boys ( $N = 122$ ) and found that mesomorphy correlates significantly in both groups with ratings of "takes chances" ( $r = .41$ ), "daring" ( $r = .45$ ), "good at games" ( $r = .48$ ), and "active in games" ( $r = .45$ ). A total of 31 correlation coefficients were computed between physique and classmate ratings, and, although some relationships are significant for one group, only these four are significant for both groups, indicating the need for and difficulty of replicating findings in this area. An earlier study by Cabot (1938) used Kretschmer's (1925) typology and found that adolescents ( $N = 62$ ) who are *athletosomes* (i.e., muscular) are superior to adolescents with other types of physiques in such highly valued traits as competitiveness, extraversion, social in-

fluence, ascendance, and leadership, as measured by both teacher ratings and personality tests.

### *Values*

No relationship has been found between physique and values for college men (Child & Sheldon, 1941; Smith, 1949). Neither Allport's Ascendance-Submission Scale nor the Allport-Vernon Scale of Values, which measures the relative importance of social, economic, political, theoretical, aesthetic, and religious values, are associated with physique. Although Coffin (1944) reported a relationship between physique and the Allport-Vernon Scale, the study is so flawed—for example, the subjects somatotyped themselves and the data are not separately analysed by sex—that nothing can be concluded from the results.

### *DELINQUENCY*

A number of investigators have examined the relationship between somatotype and juvenile delinquency, and the findings of all of these studies point to the same conclusion. Sheldon (1949) and his co-workers studied 200 boys between the ages of 15 and 21 years who had been referred by social agencies to a home for delinquent boys. The typical boy had a history of truancy, vandalism, robbery, and assault, and had numerous encounters with the police. A comparison of the distribution of the delinquent somatotypes with the somatotypes of 4000 college students indicates that mesomorphy occurs much more frequently among the delinquents than the college students. This conclusion is based on a visual inspection of Sheldon's figures (1949, pp. 728-729) since the data are not statistically analysed.

In addition to the descriptive nature of his data, Sheldon's study suffers from the fact that the males in his control group were probably older and from a different social class than the delinquent boys, making a fair comparison of these two groups impossible. Studies by Glueck and Glueck (1950, 1956), as part of their large and continuing effort to predict delinquency, remedied both of these defects. The somatotypes of approximately 500 chronic delinquent boys were compared to a group of 500 non-delinquents who had been matched for age, social class, and race. The percentage of each somatotype among delinquents versus non-delinquents was for endomorphy 12% vs. 15%, for mesomorphy 60% vs. 31%, for ectomorphy 14% vs. 40%, and for "balanced" (i.e., no component dominant) 14% vs. 15%. In comparison to the control group, twice as many delinquents are

found to be mesomorphic, while only a third as many are ectomorphic. Glueck and Glueck suggest that the strength, physical ability, and activity level of the mesomorphic boy may under certain social circumstances turn antisocial.

A study by Cortes and Gatti (1972) used Parnell's (1958) technique of measurement and classified boys as fat, muscular, or linear, based on which of these components was dominant. One hundred delinquent boys were compared to a group matched for age, and the findings indicate that 57% of the delinquents are muscular while only 19% of the non-delinquents can be so classified. In addition, only 16% of the delinquents are linear in comparison to 33% of the non-delinquents. These results almost exactly parallel the findings of Glueck and Glueck, and provide additional support for the notion that delinquency and mesomorphy are associated.

Finally, a study by McCandless, Persons, and Roberts (1972) found that among a group of adjudicated delinquent boys between the ages of 15 and 17 years physique is unrelated to either self-report of delinquent behavior or seriousness of convicted criminal offense. Although mesomorphy may not predict particular kinds of antisocial behavior, it does appear to be positively related to juvenile delinquency in general, a finding with important social implications and one deserving more extensive examination.

### CONCLUSION

Some of the correlations found between physique and behavior, although small in magnitude, have been replicated and are therefore especially worthy of attention. A small positive relationship appears to be present in boys and men between ectomorphy and verbal ability, while mesomorphy seems either unrelated or negatively related to this intellectual skill. As one would expect based on this relationship, ectomorphy is associated with college majors and occupations that seem to require verbal ability, while mesomorphy is related to science majors and occupations that do not demand as high a level of verbal skill. No consistent relationship emerges between body type and M-F scores despite the fact that tests of masculinity load high on items concerned with sports and physical activity. Indeed, one study found that high masculine scores were obtained by ectomorphs, an intriguing finding and one worth attempting to replicate. Mesomorphs have been found to describe themselves as confident, energetic, and adventurous, and to be rated by teachers and peers as masculine,

competent, a leader, and aggressive. In contrast, endomorphs say that they are kind, relaxed, and warm; while ectomorphs describe themselves as tense, shy, and reserved. Finally, a number of studies have found a positive relationship between juvenile delinquency and mesomorphy.

Although many of these relationships are small in magnitude, the fact that they have all been replicated suggests that they may be true and, therefore, in need of explanation. Lindzey (1967) has proposed five possible mechanisms, such as genetic factors and social stereotypes, that might account for a body-behavior association. Each of these mechanisms presumes, however, that there is a relationship between body and behavior and seeks to explain its origin. Before examining possible causal pathways, it will be worthwhile to consider what needs explaining, based on the literature reviewed in this paper.

With the exception of the investigations of intelligence and delinquency, all of the relationships reported here have been between physique and behavioral ratings (self, parent, teachers, and friends), not actual behavior. The underlying methodological assumption of all of these studies is that self-reports and behavioral ratings accurately reflect actual behavior. Such an assumption may be untenable, as Mischel (1968) and others have argued, particularly where strong preconceptions or stereotypes already exist concerning the hypothesis under investigation. For example, if one already believes that muscular males are more masculine than other males, one might perceive the veracity of this relationship in oneself or in others apart from the actual circumstances. The existence of strong stereotypes about physique and behavior would make studies using behavioral ratings as the dependent variable inappropriate, since whatever association might be found could as easily be in the eye of the beholder as in actuality.

In fact, very clear and consistent stereotypes do exist in the minds of most people concerning the type of personality that is possessed by men with different physiques. These stereotypes appear to develop very early (Lerner, 1969a; Staffieri, 1967) and are similar in their essentials for males and females (Wells & Siegel, 1961), individuals of different races and classes (Brodsky, 1954), and cultures (Lerner & Iwawaki, 1975). For example, Lerner (1969b) found that college females describe endomorphs as poor athletes and as men who eat and drink the most and are least preferred as friends. Mesomorphs are considered to make the best leaders, to have many friends and to be the most desired friends, to be the most aggressive, the best soldiers, and the best

athletes. Ectomorphs are seen as men who eat the least, smoke the most, are the least aggressive, and the ones most likely to have a nervous breakdown. In general, the personality stereotypes that are associated with each type of physique tend to be similar to the obtained behavioral ratings associated with each type of physique, suggesting that the obtained correlations between behavioral ratings and physique may be the result of stereotypes and may not indicate a true relationship between body and behavior. Investigations of the relationship between physique and actual behavior, e.g., aggression, conformity, altruism, etc., are sorely needed.

Not only may stereotypes influence the perceptions of an observer, but they may also effect the behavior of the perceivers themselves. Mesomorphs are apparently perceived by teachers and friends as more masculine and socially competent than boys with other physiques, and irrespective of whether or not they actually are, mesomorphs may be treated differentially and their behaviors evaluated differentially than other boys. Such a possibility suggests a parallel between physique in men and physical attractiveness in women. Bar-Tal and Saxe (1976) recently reviewed the literature on the relative importance for males and females of physical attractiveness and concluded that whether or not attractive females are actually more competent and capable than unattractive females, they are perceived as such and are more highly desired by males as dates and mates. Apparently physical attractiveness does not exert the same kind of influence on the evaluation and desirability of men, although physique may. Research on this question would be useful.

Perhaps the most reasonable conclusion that can be drawn from this survey of the relationship between men's bodies and their behavior is that if a relationship does exist between these two variables it is weak and the magnitude of the association is small. The data from studies in this area consist of low but positive correlations, often only reaching the .05 statistical confidence level and sometimes not even that, which are rarely replicated and which never account for more than a trivial proportion of the variance. The evidence that we now have suggests that factors other than body type account for most of the psychological and behavioral differences among men. However, even this conclusion must be tentative since the methods thus far used to investigate this question have for the most part been inappropriate to the task. In the final analysis, it appears that today we are little closer to knowing whether or not a man's

body type influences his behavior than Hippocrates was when he originally posed the question 2500 years ago.

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