

Analysis and Improvement of the Measurement of Interpersonal Attraction and Homophily

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Three decades ago measures of interpersonal attraction and homophily were introduced to the field. A substantial number of research studies have been reported that employed one or more of these measures. This research was examined to evaluate their reliability and validity. It is concluded that all of these measures are reasonably reliable and valid. However, since the reliabilities have been highly variable, it was determined that improved measures should be used in the future. Second generation, revised and improved, versions of these measures are reported and recommended for future research.

Keywords: Homophily; Interpersonal Attraction; Measurement; Validity; Reliability

Over the years research in human communication has consistently advanced knowledge about how 'person perceptions' affect interpersonal communication and vice versa. Two of the more important categories of person perceptions are interpersonal attraction and homophily (similarity). Concern with attraction and homophily has generated numerous communication studies that have lead researchers to feel the need for more reliable measuring instruments in these areas. This research carefully analyzed the reliability and validity of the first generations of these measures and developed second-generation measures that are more reliable and portend to be more valid for future research.

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In 1974, McCroskey and McCain (1974) reported the development of self-report measures of interpersonal attraction. This first-generation measure consisted of three dimensions: physical, social, and task. This multi-dimensional measure has since been employed in numerous research studies. McCroskey and McCain (1974) based much of their research and conceptualization upon the work of Berscheid and Walster (1969). Berscheid and Walster (1969) suggested that the more attracted we are to another person the more we will attempt to communicate interpersonally with that person, and the more attracted to another person we are, the more influence that person has over us and our communication. Berscheid and Walster (1978) subsequently conceptualized interpersonal attraction as 'an individual's tendency or predisposition to evaluate another person or the symbol of the person in a positive (or negative) way' (p. 3).

Berscheid and Walster (1978) noted that numerous types of instruments, yielding data from nominal level to ratio level, had been used to measure interpersonal attraction, with Likert-type scales being one of the most popular. McCroskey and McCain's (1974) multi-dimensional attraction measure is a self-report, Likert-type instrument. The instrument has been found to be fairly reliable in some studies, but less so in others (particularly when using less than the full number of items in the original measure). It has excellent face validity. One of the purposes of this research, therefore, was to examine the claims for reliability and validity of the attraction scales in light of research since 1974 which has employed the scales, and then improve the measures if needed.

In 1975 McCroskey, Richmond, and Daly (1975), reported a multi-dimensional measure of perceived homophily (similarity of source and receiver). Much of their research and conceptualization was founded on a basic interpersonal communication principle: The more source and receiver are similar (homophilous) the more communication attempts increase and the more likely communication will be effective. Their approach to the measurement of homophily was derived from previous research summarized by Rogers and Shoemaker (1971). Previous research treated homophily primarily as an objective variable, e.g., if two people are from the same village and engaged in the same work, they are homophilous. McCroskey, Richmond, and Daly (1975) argued that perceptions of similarity may be more important than real, objective, similarity and proceeded to develop instruments to measure this type of person perception. The resulting instrument was found to measure homophily on two dimensions, attitude and background, for which extensive previous literature provided a conceptual base. In addition, an unstable dimension, variously labeled 'morality' and 'value' was observed, as was an 'appearance' dimension which appeared to be an artifact stemming from differential sexual combinations in dyads studied.

The two dimensions of homophily with which we are concerned here are attitude and background. The first-generation measures have good face validity but only moderate reliability in several studies in which they were used. A second purpose of the present research, therefore, was to examine the claims for reliability and validity

of the homophily scales in light of their use in three decades of on-going research, and, if necessary or desirable, develop improved instruments.

Reliability of Attraction Scales

Although the reliability of any measuring instrument does not guarantee validity, it is a necessary component. If consistently unsatisfactory reliability estimates are reported for a measure, this may suggest the measure should not be employed in future research. As a minimum, unsatisfactory reliability estimates indicated that more research should be conducted to improve the measure.

Table 1 summarizes the reliabilities reported in a group of representative studies that have employed the attraction scales. As noted in Table 1, reliability estimates ranged from 0.67 to 0.93 on social attraction, 0.66 to 0.95 on physical attraction, and 0.69 to 0.90 on task attraction (Adams, 1976; Andersen & Kibler, 1978; Ayres, 1989; Berger & Clatterbuck, 1976; Burgoon, Coker, & Coker, 1986; Burgoon & Hale, 1988; Burleson, Kunkel, & Birch, 1994; Duran & Kelly, 1988; Garrison, Pate, & Sullivan, 1981; Garrison, Sullivan, & Pate, 1976; Hickson, Powell, & Sandoz, 1987; Jensen, 1978; McCroskey, Hamilton, & Weiner, 1974; McCroskey & McCain, 1974; Powers, Jordon, Gurley, & Lindstrom, 1986; Richmond, 1978; Richmond & Robertson, 1976; Rocca & McCroskey, 1999; Rosoff, 1978; Rubin & McHugh, 1987; Sorensen, 1979; Sullivan, 1977; Walther, 1997; Walther, Slovacek, & Tidwell, 2001; Wheelless, Frymier, & Thompson, 1992; Wheelless, Powers, & McVetta, 1979). Several additional studies have employed the scales, but the researchers failed to report reliability estimates (Afifi & Burgoon, 2000; Clatterbuck, 1979; Lashbrook, 1975; Luchok, 1973; Mason, 1973; McCain & Repensky, 1972; McCroskey & Richmond, 1976; McCroskey, Richmond, & Daly, 1975; Parsley, 1976; Quiggins, 1972; Snavely, Merker, Becker, & Book, 1976; Wakshlag, 1973).

While the reported reliability estimates generally fall within the range that can be considered as fair to good, they are not excellent. Some researchers have used some of the items from the measures, but not all. Generally, reliabilities have been much lower when fewer items have been employed. Since the measures for each attraction dimension are short, it should be expected that reliability estimates can be substantially increased by adding more items that are similar to those on the original instrument. Research will be reported later in this article, which followed this procedure and generated reliability estimates above 0.90 across participants drawn from two separate populations.

Reliability of Homophily Scales

Significantly less research has been conducted utilizing the McCroskey, Richmond, and Daly (1975) homophily scales. This may be due in part to the lower research interest in homophily as compared to attraction in the area of interpersonal communication. Another possible reason for the limited use of the scales, however, is

Table 1 Reported Reliability Estimates for Interpersonal Attraction Scales

Study	Sample size	Attraction dimension			
		Social	Physical	Task	
McCroskey and McCain (1974)	215	0.75	0.80	0.86	
McCroskey, Hamilton, and Weiner (1974)	115	0.84	0.86	0.81	
Adams (1976)	268	0.74	*	0.75	
Andersen and Kibler (1976)	350	0.67	0.66	*	
Berger and Clatterbuck (1976)	135	0.80	0.89	0.81	
Garrison, Sullivan, and Pate (1976)	194	0.69	0.74	0.76	
Richmond and Robertson (1976)	293	0.76	0.74	*	
Sullivan (1977)	211	0.84	0.83	*	
Jensen (1978)	327	0.77	0.86	0.78	
Richmond (1978)	Study 1, Time 1	180	0.78	0.74	0.76
	Study 1, Time 2	180	0.86	0.82	0.80
	Study 2, Time 1	162	0.77	0.78	0.72
	Study 2, Time 2	162	0.76	0.78	0.72
Rosoff (1978)	52	0.86	*	0.89	
Sorensen (1979)	210	0.74	0.93	0.90	
Wheeless, Powers, and McVetta (1979)	206	0.81	0.67	0.79	
Brandt (1979)**	180	0.97	*	0.90	
Garrison, Pate, and Sullivan (1981)	194	0.69	0.74	0.76	
Burgoon and Koper (1984)	45	0.39	0.66	0.75	
Warfel (1984)	207	0.73	*	0.79	
Burgoon, Coker, and Coker (1986)	145	0.76	0.74	0.68	
Powers, Jordon, Gurley, and Lindstrom (1986)	349	0.81	0.89	0.86	
Canary and Spitzberg (1987)	361	0.86	*	0.82	
Hickson, Powell, and Sandoz (1987)	114	0.75	0.80	0.86	
Rubin and McHugh (1987)	303	0.84	0.86	0.81	
Burgoon and Hale (1988)	(dyads) 82	0.68	0.73	0.75	
Duran and Kelly (1988)	(Pre-test) 118	0.78	0.83	0.78	
	(Post-test) 118	0.81	0.86	0.80	
Sorensen and Beatty (1988)	210	0.93	*	0.74	
Wheeless and Reichel (1990)	227	*	*	0.83	
Hawkins and Stewart (1991)	62	0.82	*	0.90	
Wheeless, Frymier, and Thompson (1992)	353	0.93	0.92	0.90	
Burleson, Kunkel, and Birch (1994)	(dyads) 135	0.73	0.93	0.81	
DeCarlo and Leigh (1996)	218	0.90	*	0.92	
Lindsey and Zakahi (1996)	78	0.87	*	*	
Walther (1997)	54	0.93	0.95	0.90	
Floyd and Voloudakis (1999a)	80	0.88	*	0.79	
Floyd and Voloudakis (1999b)	80	0.88	*	0.79	

Table 1 (Continued)

Study	Sample size	Attraction dimension		
		Social	Physical	Task
Rocca and McCroskey (1999)	167	0.78	0.83	0.69
Baringer and McCroskey (2000)	129	0.81	*	0.90
Burgoon, Bonito, Bengtsson, Lundeberg, and Allspach (2000)	70	*	*	0.79
McCroskey and Richmond (2000)	213	0.88	*	0.80
Richmond and McCroskey (2000)	224	0.87	*	0.77
Rubin and Step (2000)	235	0.69	*	0.75
Lee and Gudykunst (2001)***	283	0.92	*	*
Martin, Heisel, and Valencic (2001)	37	0.82	*	0.89
Walther, Slovacek, and Tidwell (2001)	24	0.86	0.95	0.90
Burgoon, Bonito, Ramirez, Dunbar, Kam, and Fisher (2002)	80	*	*	0.85
Flanagin and Metzger (2003)	156	*	0.90	*
Allen and Post (2004)	195	0.70	0.70	0.61

*Study did not employ this dimension.

**Study used items generated by McCroskey, Hamilton, and Weiner (1974).

***Study reliabilities are based on McCroskey and McCain's (1974) scale and items from Burleson, Kunkel, and Birch's (1994) intellectual dimension.

that they have yielded some rather unstable dimensions (i.e., value) and reliability estimates, particularly on the background dimension, have been less than normally desired.

Table 2 summarizes reliability estimates reported for the attitude and background homophily dimensions. Reliabilities for the attitude dimension range from 0.75 to 0.93 and for the background dimension, from 0.51 to 0.83 (Adams, 1976; Andersen & Kibler, 1978; Elliot, 1978, 1979; Garrison et al., 1981; Garrison et al., 1976; Gudykunst, 1985; Gudykunst, Yang, & Nishida, 1985; Jensen, 1978; Prisbell & Andersen, 1980; Rocca & McCroskey, 1999; Rosoff, 1978; Sorensen, 1979; Sorensen & Beatty, 1988; Turner, 1993). Several other researchers have employed the homophily scales but have failed to report their obtained reliabilities (Burgoon et al., 2002; Daly, McCroskey, & Falcione, 1976; Hickson et al., 1987; McCroskey & Richmond, 1976; McCroskey, Richmond, & Daly, 1975). Several researchers have also employed the measures but have reported the aggregate scale reliability or it was unclear which dimension's reliability the authors were reporting (Morris, Gorham, Cohen, & Huffman, 1996; Prisbell, 1999; Simpson, Snuggs, Christiansen, & Simples, 2000; Vorauer & Cameron, 2002; Vorauer, Main, & O'Connell, 1998; Wright, 2000).

Table 2 Reported Reliability Estimates for Homophily Scales

Study	Sample size	Homophily dimensions	
		Attitude	Background
Adams (1976)	268	0.84	0.66
Andersen and Kibler (1976)	350	0.84	0.75
Garrison, Sullivan, and Pate (1976)	194	0.82	0.69
Garrison, Pate, and Sullivan (1981)	194	0.82	0.69
Elliot (1978)	323	0.88	0.71
Jensen (1978)	327	0.89	0.69
Rosoff (1978)	52	0.93	*
Elliot (1979)	323	0.88	0.71
Sorensen (1979)	210	0.80	0.52
Prisbell and Andersen (1980)	400	0.90	0.73
Gudykunst (1985)	400	0.75	*
Gudykunst, Yang, and Nishida (1985)	278	0.60**	*
Sorensen and Beatty (1988)	210	0.80	0.51
Turner (1993)	355	0.92	0.83
Prisbell (1999)	160	0.91	*
Rocca and McCroskey (1999)	167	0.87	0.69
Allen and Post (2004)	195	0.86	0.73
Wright (2004)	178	0.75***	0.75***

*Study did not employ this dimension.

**When item 1 was removed, reliability increased to 0.64 or above for each group.

***Study used McCroskey and Richmond's (1996) revised PIIS.

As was the case with the attraction scales noted above, these reliability estimates range from fair to good, but are not in the excellent range. The measures of each dimension include only four, bipolar items, and several researchers have used less than four of the items. Thus, it should be expected that reliability estimates can be substantially increased by adding more items of a similar nature. This procedure was followed in research to be reported later in this article. In addition, because some of the best reliability estimates reported in previous research were generated in the Andersen and Kibler (1978) research, and these researchers converted the scales to a Likert-type format, it was decided to employ the Likert approach rather than using the bipolar scales in the new instruments which will be discussed later.

Factorial Stability of Attraction Scales

In studies that have employed factor analysis to test the dimensionality of the original attraction measure, the original three factor structure has been replicated (Burleson et al. 1994; Daly, McCroskey, & Richmond, 1977; Garrison et al., 1976; Jensen, 1978; Lashbrook, 1975; Lee & Gudykunst, 2001; McCroskey et al., 1974; McCroskey, Richmond, Daly, & Cox, 1975; Richmond & Robertson, 1976; Sullivan, 1977; Warfel, 1984). The originally assumed orthogonality of the dimensions however, has not been

Table 3 Intercorrelations of Attraction Dimensions

Study	Dimensions		
	Task/Social	Task/Phys.	Phys./Social
McCroskey, Hamilton, and Weiner (1974)	0.36	0.20	0.38
McCroskey, Daly, Richmond, and Cox (1975)	0.15	0.22	0.40
Adams (1976)	0.17	0.09	0.12
Richmond and Robertson (1976)	0.14	*	*
Sullivan (1977)	0.24	*	*
Jensen (1978)	0.28	*	*
Rosoff (1978)	0.45	0.32	0.53
Sorensen (1979)	0.45	*	*
	0.52	0.47	0.49

*One dimension not included in study.

consistently supported (Hill & Courtwright, 1981). The intercorrelations of the attraction dimensions (see Table 3) have ranged from 0.09 to 0.53 (Adams, 1976; Jensen, 1978; McCroskey, Daly, Richmond, & Cox, 1975; McCroskey et al., 1974; Richmond & Robertson, 1976; Rosoff, 1978; Sullivan, 1977). This seems to suggest that the attraction scales have three stable and distinct, but not orthogonal, dimensions.

As noted in Table 3, the correlations among dimensions vary from one context to another. Similarly, the correlations between scores on the various dimensions and individual predictor/criterion variables have been found to differ substantially, as we will note and discuss later. Both of these observations point to the need to treat attraction as multi-dimensional, but without *a priori* imposition of either orthogonality or obliquity on the relationships among dimensions. This conclusion is reinforced by results of research by Duran (1978). Whereas most researchers have found a positive correlation between task and social attraction, Duran (1978) found a negative correlation (-0.57) between perceived task and social attraction of individuals chosen for dyadic partners in a task environment. Clearly, interpersonal attraction is multi-dimensional and the McCroskey and McCain (1974) scales tap three of those distinct dimensions. It should be noted as a point of contrast that the other most popular measure of attraction, Byrne's (1971) Interpersonal Judgment Scale (IJS), does not make such distinctions. Use of the IJS, therefore, should be expected to obscure meaningful relationships which would be observable were the multi-dimensional measure of attraction employed.

Validity of Attraction Scales

Although there are a variety of methods of estimating the validity of a measure, one of the better approaches is to examine research that has employed the measure to determine whether obtained results are consistent with expectations based on the

nature of the construct supposedly measured. In the present case, theory concerning interpersonal communication and attraction suggests that differential communication behaviors should result in differential attraction perceptions. A valid measure of attraction should be capable of indexing such differential perceptions. The studies summarized below provide data bearing on this validity question.

Several researchers have found that interpersonal attraction is related to interpersonal communication behaviors. McCroskey et al. (1974) studied the relationship between interaction behavior in a small group setting and perceptions group members have of each other. The study confirmed that interaction behavior is a predictor of the dimensions of attraction. The amount of predictable variance for physical attraction was 28%, social attraction 40%, and task attraction 39%. People with low verbosity, high task orientation, flexibility, and relevance scores were perceived as more physically attractive. People perceived to be highly task attractive were observed to be less verbose, made less relevant contributions, and scored higher on interest and tension. High social attraction was associated with low interest, tension, and relevance scores and high verbosity and task orientation scores.

McCroskey, Daly et al. (1975) found that high communication apprehensives were perceived as less attractive than low communication apprehensives by members of the opposite sex in two studies. In their cross-sex dyads, low communication apprehensives were perceived as more socially attractive than high communication apprehensives. This relationship accounted for 10% of the variance in social attraction in both studies. The results also indicated that low communication apprehensives were perceived as more task attractive than high communication apprehensives. However, this relationship accounted for only 1-2% of the variance in task attraction. McCroskey and Richmond (1976) obtained similar results in a comparable study. Ayres (1989) found that high CA males found females as lower in physical attractiveness than did low CA males in initial interactions. No differences were found for high or low CA females. In their study of CA on perceptions of leadership and attraction in small groups, Hawkins and Stewart (1991) reported that those who scored higher in CA were rated by themselves and by others to be lower in emerged leadership, and lower in both social and task attraction, than those with lower CA.

Lashbrook (1975) studied what perceived characteristics discriminate between leaders and nonleaders in a small group situation. Results indicated that task attraction, extroversion, and character provided reasonably accurate classifications of leaders and nonleaders.

Andersen and Kibler (1978) examined credibility, attraction, and homophily on voter preference. Three hundred fifty registered democrats were surveyed on voter preference for two candidates. Both social and physical attraction discriminated significantly between favored and opposed candidates.

Berger and Clatterbuck (1976) studied the effects of attitude similarity and amount of attributional information on uncertainty level and interpersonal attraction. They employed two measures of attraction, the McCroskey and McCain (1974) scales and

the Byrne (1971) Interpersonal Judgment Scale (IJS). The IJS correlated 0.71 with social attraction, 0.30 with physical attraction, and 0.54 with task attraction. Berger and Clatterbuck (1976) concluded that 'These findings indicate that the McCroskey and McCain attraction scale does tap attraction dimensions not sampled by the Byrne IJS. Specifically, the IJS primarily appears to be a measure of social attraction' (p. 3). They also found as the amount of attributions information increased, attraction increased.

Clatterbuck (1979) examined a series of 17 studies (not all conducted by the author), using 1370 participants, and set out to test whether a positive correlation between attributional confidence and interpersonal attraction exists. Three measures of attraction were used: Byrne's Interpersonal Judgment Scale (IJS), 15-items from the attraction scale (McCroskey & McCain, 1974), and individualized scales constructed by researchers. The IJS and McCroskey and McCain's (1974) scale had an overall correlation of 0.70 or better. The correlation between McCroskey and McCain's (1974) scales and Clatterbuck's (1979) CL65 were tested in one study and found to be significant ($r = 0.45$; $n = 80$, $p < 0.05$). The correlation between CL7 and the McCroskey and McCain (1974) scale was significantly correlated in three of four studies (range = 0.15 n.s. to 0.48, with an average correlation of 0.36). The researchers in four studies found consistently positive correlations in the three classes of attraction measure (social attraction was significantly correlated in three of four studies, average correlation of 0.34; physical attraction correlated significantly with CL7 in two of four experiments, with an average of 0.22; and task attraction correlated significantly in two of four studies, with an average correlation of 0.28). A modest but positive relationship exists between attraction and attributional confidence.

Powers et al. (1986) examined how sources of varying levels of cognitive complexity encoded messages and were perceived as a consequence of those messages. High cognitive complex (HCC) participants were perceived as more socially and physically attractive, whereas low cognitively complex (LCC) participants were perceived as more task attractive. The between-group variance accounted for by the dimensions of attraction were 9.3 (social), 15.9 (task), and 7.9 (physical).

Richmond and Robertson (1976) studied social and task attraction in relation to males and females who expressed their support of or opposition to women's liberation. Significant results were obtained on both social and task attraction. Expressing views similar to those expected of the opposite sex was found to enhance attraction.

Daly et al. (1977) studied vocal activity in small groups and its influence on perceptions of communicators' attractiveness. The results indicated a positive linear relationship between increased vocal activity and both task and social attraction that became a negative relationship at extreme vocal activity levels.

Garrison et al. (1976) examined 14 interpersonal valence dimensions in dyadic communication contexts such as friends, acquaintances, co-workers, and families.

Social and task attraction discriminated significantly among the dyadic communication contexts studied.

Sullivan (1977) studied interpersonal valence dimensions that were hypothesized to discriminate among social styles. He found that social attraction was a significant discriminator, but task attraction was not.

Rosoff (1978) studied nonverbal immediacy and interpersonal attraction. Increased immediacy accounted for 24% of the variance in social attraction and 20% of the variance in task attraction. Baringer and McCroskey (2000) examined student immediacy in the classroom. Student immediacy was positively correlated with participants' perceptions of students' interpersonal attractiveness. The results on the task and social attractiveness dimensions were comparable to those reported in Rosoff's (1978) study. Sorensen (1979) conducted a study that examined one of the more important immediacy behaviors, touch. She found that touching touch approacher subjects increased perceived task attractiveness of a confederate in an interview setting, but touching touch-avoider subjects in the same context reduced task attraction. No significant effects for social or physical attraction were observed. Sorensen and Beatty (1988) found similar results in their study of the interactive effects of touch approach-avoidance on interpersonal attraction and perceived homophily. The results demonstrated that perceptions of interpersonal attraction and homophily are partially dependent on the receiver's level of touch avoidance.

Duran and Kelly (1988) examined whether communication competence influences perceived task and social attractiveness. Results indicate that communication competence accounted for 17% and 14% of the variance in perceived task and social attractiveness, respectively.

Recent research efforts have also investigated the influence of perceptions on attraction as a result of communicator style. McCroskey and Richmond (2000) found that supervisor socio-communicative style and subordinate socio-communicative orientation are positively correlated with each other and both predict subordinates' credibility, attractiveness, and subordinates' general attitude toward that supervisor and communicating with that supervisor. The analyses suggest a moderately strong association between supervisor assertiveness and both perceived competence ($r = 0.47$) and task attraction ($r = 0.36$). Responsiveness was found to be most associated with social attraction, trustworthiness, and goodwill, but it was also substantially associated with competence and task attraction. Supervisor assertiveness was found to be more substantially related with competence and task attractiveness than the other perception variables studied.

Brandt (1979) designed a study to empirically assess the relationship between communicator style and perceived attractiveness and communication effectiveness. The results indicated that there are at least two interactive styles that are related to two types of perceived attractiveness and effectiveness.

Wheless and Reichel's (1990) hypotheses were supported, thereby demonstrating substantial relationships between general communication styles and conflict manage-

ment styles, as well as very substantial relationships between the style constructs and task attraction of supervisors.

Richmond and McCroskey (2000) found that supervisors who are more immediate are perceived as more interpersonally attractive by their subordinates. The correlation between supervisor immediacy and attraction was considerably higher for the social dimension ($r = 0.64$) than for the task dimension ($r = 0.40$). The results indicate that supervisor immediacy could predict 16% of the variance in task attraction, and 41% of the variance in social attraction.

Decarlo and Leigh (1996) studied the impact of salesperson attraction on sales managers' attributions and feedback. The authors developed a model of how a salesperson's task and social attraction affect a sales manager's causal attributions explaining the salesperson's poor performance and the manager's corrective feedback based on those attributions. The results suggested that task and social attraction directly affect causal attributions, cognitive effort, and decision confidence, and in absence of the mediating role of causal attributions, affect coercive and nonpunitive feedback directly. Factor analysis of the task and social attraction items revealed two dimensions that accounted for 74% of the item variance.

Hellweg and Andersen (1989) reviewed five source valence instruments designed to measure credibility, attraction, and homophily in the organizational context. They examined the existing studies from the literature that used the constructs and assessed the relative reliability estimates for these instruments through meta-analysis of psychometric data associated with them. The authors cite only one study (Wheless & Reichel, 1990) that solely examines interpersonal attraction among source valence constructs. Three studies incorporated source valence, attraction, and homophily measures (Falcione, Daly, & McCroskey, 1977; Hurt & Teigen, 1978; Garrison et al., 1981).

The results of the four organizational studies can be summarized as follows: management communication style (MCS) was positively correlated with supervisory task attraction, solution-oriented conflict management style was related to task attractiveness of supervisors, non-confrontational and controlling conflict styles were negatively related to task attractiveness, and the best predictive model of supervisor task attractiveness was provided by a combination of supervisor versatility, responsiveness, solution orientation, and nonconfrontation (Wheless & Reichel, 1990). Supervisors who were employed by innovative organizations were perceived by their subordinates as more credible, attractive, and homophilous. The subordinates feel closer, more trusting, and satisfied about their communication with their supervisors (Hurt & Teigen, 1978). Garrison et al. (1988) found that source valence components (credibility, attraction, homophily, trust, and satisfaction) were significant discriminators across relational contexts (friend, acquaintance, co-worker, and one's family). Physical attraction and background homophily did not meet the requirements of the model because single scale items were found to be better predictors than the dimensions. Falcione et al. (1977) found an association between

employee perceptions of supervisor (credibility, attraction, and attitude homophily) and supervisor satisfaction.

The onset of mediated communication in the communication literature has also been noted as a heuristic area for investigation in conjunction with the attraction construct. Walther et al. (2001) examined whether and when a participant will benefit from seeing each other's faces in computer-mediated communication (CMC). Results indicated that in new, unacquainted teams, seeing one's partner promotes affection and social attraction, but in long-term online groups, the same type of photograph reduces affinity.

Walther's (1997) analyses indicated 'that in terms of intimacy/affection, social attractiveness, and physical attractiveness, we can identify and systematically influence certain social conditions by which the use of CMC renders alternatively more positive or more negative outcomes, that these effects are respectively greater than those achieved using the full range of communication that is available in FtF interaction, and that these outcomes correspond to differences in intellectual effort in the groups in which they occur' (p. 360).

Walther (1997) manipulated the term of association (short/long) and identity membership (group/individual) to test the effects on social, physical and task attraction. Attractiveness variables were examined using contrast analysis for the interaction effects of term association by identity. The contrast analysis for the hypothesized interaction was significant for social attractiveness. Long term/group identity partners were rated highest in social attractiveness. Long term/individual identity and short term/individual identity partners were rated as moderate in social attractiveness, and short term/group identity partners were rated as the least socially attractive. Participants who had never seen each other rated long term/group member partners most physically attractive, short term/group identity partners were rated least physically attractive, and both individual identity conditions were moderate. Task attractiveness was not affected by an interaction, and ANOVA revealed no main effects.

Rubin and Step (2000) hypothesized that more attraction and greater parasocial interaction with a talkradio host should lead to more salient outcomes, including interpersonal influence on attitudes and behaviors. They examined the impact of motivation, interpersonal attraction, and parasocial interaction (PSI) on listening to public affairs talk radio. The results revealed that PSI and task attraction, in part, predicted whether a person would regard a host as an important source of information and that a host influenced attitudes. In a related study, Rubin and McHugh (1987) found that parasocial interactions follow a path from (a) social and task attraction to (b) parasocial interaction to (c) sense of relationship importance.

The relational communication literature has yielded many relevant studies associated with the attraction dimension. Burleson et al. (1994) examined similarity and satisfaction in romantic relationships. The results revealed a moderate relationship between the degree of similarities in couples' communication values and

assessments of attraction and satisfaction (i.e. partners with similar communication values were more attracted to one another and more satisfied with their relationship).

Wheless et al. (1992) tested relationships between verbal output and interpersonal attraction (physical, social, and task). The alpha reliabilities of the three attraction measures were all above 0.90. The results indicated that there was a strong positive linear relationship between the verbal output of communicators and their perceived attractiveness on all three dimensions.

Intercultural communication and intergroup communication has received much attention in the general communication literature. Many studies in this context have investigated the impact of and on the attraction dimensions. Lindsey and Zakahi (1996) conducted a study to determine if behavior that deviated from gender stereotypes during initial interaction produced less positive perceptions of a target than did behavior conforming to stereotype. Analyses revealed a significant three-way interaction (target gender \times ask vs tell \times gender schematicity interaction) accounting for 8% of the variance in social attraction.

Lee and Gudykunst (2001) examined how interpersonal and intergroup factors (perceived similarity in communication style, perceived self-concept support, lack of uncertainty, strength of ethnic identities, positive intergroup expectations, and shared intergroup networks) influence attraction in initial interethnic interactions when they are taken together at the same time. The results indicated that, depending on the group analyzed (European American or non-European American), interpersonal and intergroup factors predicted attraction.

Studies attempting to further understand intercultural theory have included theoretical aspects of expectancy violations theory. These studies have examined the impact of expectancy violations and the consequences for attractiveness. Afifi and Burgoon (2000) argue that the combination of expectancy violation valence and uncertainty states influences judgments of a violator's social attractiveness. The relevant results of this study indicated that the inclusion of uncertainty and valence in models of violation outcomes accounts for greater variance in social attraction than either one separately. Burgoon et al. (1986) examined eye gaze. Participants interviewed one of four confederate interviewees who manipulated one of three levels of eye gaze (nearly constant, normal, and nearly constant aversion). Constant gaze aversion produce consistently negative impression of attraction, credibility and relational communication.

Burgoon and Hale (1988) examined nonverbal expectancy violations and nonverbal behaviors in familiar and unfamiliar relationships. Friends were rated as more attractive (task, socially, physically), credible, and as communicating more intimacy, similarity, and involvement than strangers favorable relational messages than strangers.

Research interest in a paradigm shift to biological predictors of communication behavior has also looked at the predictive relationship that these variables may have on attraction. Some of these studies have also examined communication in the computer-mediated environment. Rocca and McCroskey (1999) explored the

relationship of immediacy and verbal aggression with interpersonal attraction and homophily in the instructional context and found a negative relationship between immediacy and verbal aggression and positive relationship of immediacy with all dimensions of homophily and interpersonal attraction. Further, verbal aggression was found to be negatively related to all three dimensions of interpersonal attraction and homophily.

Martin, Heisel, and Valencic (2001) studied verbal aggression in computer-mediated decision making. Participants receiving verbally aggressive messages during a mediated interaction viewed their interactants as less socially attractive.

In a study of interactivity in human-computer interaction, Burgoon et al. (2000) examined if increased richness and anthropomorphism in interface design lead to computers being more influential during a decision-making task with a human partner. In addition, user experiences of the communication format, communication process, and the task partner were evaluated for their association with various features of virtual agents. Results showed that computers were more influential than human partners but that humans were rated more positively on social attraction than were virtual agents.

In a study of voter preferences, Allen and Post (2004) employed a variety of source perceptions, including interpersonal attraction. The results of their discriminate analysis indicated that task attraction was a significant predictor of voting preferences.

All of these studies taken together suggest that the McCroskey and McCain (1974) instrument measures three dimensions of the construct of interpersonal attraction and can index predictable variation as a function of communication behavior and communication context. The results of these studies provide a substantial case for the validity of the three dimensional, first-generation interpersonal attraction instrument.

Factorial Stability of Homophily Scales

As noted above, only the dimensions of attitude and background homophily are of present concern. While two other dimensions were identified in the early development of homophily scales, they proved to be unstable and have been discounted in subsequent research (McCroskey, Richmond, & Daly, 1975). In several subsequent studies the basic two factor structure has been observed (Andersen & Kibler, 1978; Daly et al. 1976; Daly et al. 1977; Garrison et al., 1976; Jensen, 1978; Prisbell & Andersen, 1980; Turner, 1993). The intercorrelations of the two homophily dimensions (see Table 4) have ranged from 0.27 to 0.65 (Adams, 1976; Burkholz, Eman, & Lockwood, 1975; Elliot, 1978; Jensen, 1978). This indicates that the relationship between the dimensions is variable as a function of the context in which the instrument is employed. The results of these studies suggest the homophily scales have two distinct but not orthogonal dimensions.

Table 4 Intercorrelations of Homophily Dimensions

Study	Attitude/Background
Burkholz, Eman, and Lockwood (1975)	0.27
Adams (1976)	0.65
Jensen (1978)	0.48
Elliot (1978)	0.43
Sorensen (1979)	0.25

As noted in Table 4, the correlation between the two homophily dimension scores varies across contexts. In addition, as will be noted below, the two dimension scores generate quite different relationships with other predictor/criterion variables. Clearly, then, homophily needs to be treated as multi-dimensional, without *a priori* imposition of either orthogonality or obliquity on the relationship between the dimensions.

Validity of Homophily Scales

The homophily scales have not received extensive use by researchers. However, several studies have employed the scales and a review of these studies will provide some insight into the question of the scales' validity. The studies that have employed the scales generally have been concerned with the relationship of communication context or communication behavior with perceived homophily.

Richmond (1974) investigated the relationship between the perceived characteristics of opinion leaders and their followers. The results confirmed the hypotheses that opinion leaders are perceived as more homophilous on both the attitude and background dimensions than others. McCroskey and Richmond (1976) studied the effects of communication apprehension on the perceptions of peers. The results indicated that high apprehensives perceived other high apprehensives to be more homophilous than low apprehensives on the attitude dimension. In addition, low and moderate apprehensives saw low apprehensives as more attitudinally homophilous. No significant effects were observed on the background dimension. However, Snavely et al. (1976) found that perceived background homophily discriminated between high and low communication apprehensives in an acquaintance context.

Daly et al. (1977) studied relationships between vocal activity and perception of communicators in small groups. Their results indicated that group members perceived others as most homophilous on the attitude dimension if the target person's vocal activity level was similar to their own.

Elliot (1978, 1979) examined the impact of homophily in a learning context. He found that higher attitude and background homophily between teacher and student (as perceived by the student) resulted in higher student learning in the affective domain, but not in the cognitive domain. Rosoff (1978) investigated nonverbal immediacy and interpersonal perceptions that teachers have of students. He found

that attitude homophily was positively correlated ($r=0.29$) with nonverbal immediacy. Rocca and McCroskey (1999) explored the relationships of immediacy and verbal aggression with homophily in the instructional context and found that immediacy was negatively related to verbal aggression and positively related to attitude and background homophily. Verbal aggression was negatively correlated to attitude and background homophily dimensions. Morris et al. (1996) investigated the effects of graduate teaching assistants' attire on students' perceptions of college teachers. The most positive influences of instructor dress were found in the highly casual condition (faded jeans, T-shirt, flannel shirt). Perceptions of homophily accounted for a small amount of variance ($r^2=0.03$), but there was no significant effect of dress condition on ratings of homophily.

Other studies have examined nonverbal communication and homophily. Sorensen (1979) studied the impact of unobtrusive touching on perceived homophily. She found that touch-avoidant subjects perceived confederates who touched them to be less homophilous (in both attitude and background) than those who did not, while touch approacher subjects reported just the opposite perceptions. Sorensen and Beatty (1988) found similar results.

Hickson et al. (1987) examined differences in homophily, interpersonal attraction, and credibility of a female target as a function of eye color. Results revealed significant differences as a function of participant gender on physical and background homophily.

Prisbell (1999) examined four variables; attitude homophily, solidarity, uncertainty, and safety across four types of relationships. The results indicated that participants in close relationships (intimate or friendship) perceived greater homophily, solidarity, uncertainty, and safety than participants in distant relationships (casual acquaintance and business or professional). The hypothesis using attitude homophily as the dependent variable was supported. A linear combination of types of relationship accounted for 25% of the variance in attitude homophily. Mean scores were higher for intimate than for casual acquaintance relationships, friendships, and business or professional relationships. Friendships were associated with higher mean scores than business or professional relationships. In a related study, Prisbell and Andersen (1980) found that perceived attitude homophily had a moderately high independent predictive power concerning level of uncertainty, feeling good, and safety, however, perceived background homophily had little or no independent predictive power. Garrison et al. (1976) investigated interpersonal valence dimensions in dyadic contexts. Attitude homophily was found to discriminate among types of dyadic contexts.

Homophily studies have also been extended to include the examination of culture. Gudykunst et al. (1985) added to the construct validity of the perceived homophily measure in their investigation of the effects of similarity on uncertainty reduction strategies for different cultures (USA, Japan, Korea) across three relationship types (acquaintance, friend, dating relationship). They suggest that attitudinal similarity in dating relationships leads to the use of the interactive strategy to reduce uncertainty

and that this strategy leads to other self-disclosure that then influences attributional confidence. When one item was removed from the attitude similarity scale, reliability increased to 0.64 or above for each of the culture groups (items 1, 2, and 3 from the PHS were used to measure similarity).

Gudykunst (1985) examined the influence of cultural similarity (intercultural *vs* intracultural), type of relationship (acquaintance *vs* friend), and self-monitoring (covariate) on attitudinal homophily, self-disclosure, interrogation, deception detection, attraction, length of relationship, shared networks, and attributional confidence. The analysis by type of relationship yielded significant univariate effects for attitudinal similarity. Results indicated that each independent variable influenced the dependent variables, and that there was a significant interaction between cultural similarity and type of relationship. The findings suggest that aspects of uncertainty reduction theory can be extended beyond initial interactions with strangers to include acquaintances and friendships.

Simpson et al. (2000) examined ethnic identity, racial congruity, and perceived homophily. The research examined the moderation effect of ethnic identification (strength of identity with other Blacks) on the tie between advertising stimuli (with racially congruent and incongruent actors) and the participant's perceived homophily toward actors featured in ads, and if perceived homophily influences purchase intentions regarding advertised products. Regression analysis found a significant effect for the level of perceived homophily on the level of purchase intent. Individuals with high ethnic identification who viewed an advertisement with a congruent actor had a higher level of perceived homophily than those with low ethnic identification.

Allen and Post (2004) employed the homophily measures in a study of the relationships between a variety of source valence measures and voter preferences. Their results indicated a strong relationship between attitude homophily (but not background homophily) and voter preferences.

Homophily has also been studied in mediated communication contexts. Wright (2000) found that perceptions of source credibility and homophily were related to on-line network size and network satisfaction. The reported correlations among the dimensions of perceived homophily and source credibility indicated that perceptions of similarity among users may be related to judgments of credibility, and that similarity in experiences reported by the users may lead to perceptions of increased value of information provided by the on-line users. Wright (2004) also found that people who communicated extensively with others exclusively via electronic media (email) reported higher attitude and background homophily.

Turner (1993) investigated the relationship of interpersonal homophily and self-esteem with the development of parasocial interaction. Attitudinal homophily was reported to be the strongest predictor of parasocial interaction for all three groups of television performers (television newscaster, daytime soap opera character, and television personality other than newscaster or soap opera character). The study integrated interpersonal and mass communication theories to contribute to knowledge of parasocial interaction.

A perceived homophily scale, using 33 items generated by McCroskey, Richmond, and Daly (1975) and McCroskey and Richmond (1979), was used. The scale was subjected to principal components analysis that revealed similar dimensionality found in previous research. Unrotated loadings on the homophily items corresponded with three (attitude, background, and appearance) of the four dimensions found in previous research (two items included in the 'values' or 'morals' dimension in earlier research by McCroskey, Richmond, and Daly (1975) loaded on the 'attitude' dimension in the present study). Attitude homophily accounted for 28.4% of the variance (Cronbach's $\alpha = 0.92$), background homophily accounted for 10.8% of the variance (Cronbach's $\alpha = 0.83$), and appearance homophily accounted for 6.8% of the variance (Cronbach's $\alpha = 0.80$).

In Hellweg and Andersen's (1989) review of source valence instruments specifically designed to measure credibility, attraction, and homophily in the organizational context, they note that there was only one study available in the organizational communication literature that solely examined homophily as a source valence construct (Daly et al., 1976). Two source valence studies were reported that deal with both credibility and homophily of organizational targets (see Hellweg, 1978). Attitude and value homophily were found to be significant predictors of employee satisfaction for both teacher and federal worker samples, but appearance homophily was also relevant for the teacher sample (Daly et al., 1976). Perceptions of either supervisor credibility or homophily between work groups exposed to external conflict and those work groups not exposed to such conflict yielded no significant differences (Hellweg, 1976). An ideal supervisor was characterized as being extremely competent, quite safe, extroverted, and emotionally stable, as well as similar in attitudes and values, but neutral in background and appearance (Hellweg, 1978). Supervisor satisfaction was closely associated with employee perceptions of supervisor credibility, attraction, and attitude homophily, as well as perceived communication behaviors, and employee CA and self-esteem (Falcione et al., 1977).

Taken together these studies indicate that the homophily scales have predictive validity. Although the scales have been employed in a limited number of studies, results generally have been consistent with effects expected or hypothesized on the basis on the homophily construct.

Intercorrelations of Attraction and Homophily

A few researchers (Adams, 1976; Jensen, 1978; Rosoff, 1978; Sorensen, 1979) have reported correlations among the attraction and homophily dimensions. The reported correlations have ranged from 0.01 to 0.51 (see Table 5). Since the traditional theoretical literature suggests that higher homophily tends to increase attraction, moderate correlations of the type typically reported are what should be expected.

On the basis of the previous research, it would appear that the McCroskey and McCain (1974) attraction scales and the McCroskey, Richmond, and Daly (1975) homophily scales are both useful and valid measures for indexing interpersonal

Table 5 Intercorrelations of Attraction and Homophily

Study	Background homophily			Attitude homophily		
	Task	Physical	Social	Task	Physical	Social
Adams (1976)	0.11	*	0.38	0.01	*	0.39
Jensen (1978)	0.20	0.28	0.32	0.28	0.35	0.51
Rosoff (1978)	*	*	*	0.24	*	0.45
Sorensen (1979)	0.41	0.29	0.48	0.32	0.39	0.47

*Dimension not included in study.

perceptions in a variety of communication contexts. The reliability of the instruments, although generally well within the range customarily considered satisfactory, is only moderate. In general, those researchers who used the complete version of the homophily scales obtained substantially higher reliability estimates than those who used shorter versions of the instruments. Since reliability is a necessary precondition for validity, improvement of the scales in this area would increase the usefulness of the instruments for communication research. The research reported below was designed to produce second-generation measures of both attraction and homophily which would be more reliable, and as a result hopefully more valid, than the original versions.

Procedures

Attraction Scales

Generation of items

On the basis of the median reliabilities from the previous research, it was estimated that at least ten items were needed for each attraction dimension in order to attain consistent reliabilities above 0.90. The items found acceptable in the original McCroskey and McCain (1974) research were retained for this study. Additional items were written which were similar in content and structure to the original items. Although over 20 items were written for each dimension, only those that were found to be highly acceptable were retained. The resulting instrument included 12 items for the social dimension, 12 items for the physical dimension, and 14 items for the task dimension (for a listing of all items, see Tables 6–8).

Participants

The original participants upon whom McCroskey and McCain (1974) based their research were college students. Although most of the research subsequently reported which has employed these scales has also involved student participants, several studies have involved other adult populations. Because of their age level and early-adult orientations toward the opposite sex, college students may differ from other adults in

Table 6 Item-Total Correlations for Task Attraction

Item	Teacher sample (<i>n</i> = 177)	Student sample (<i>n</i> = 374)
If I wanted to get things done, I could probably depend on her/him	0.87	0.73
*He/She would be a poor problem solver	0.75	0.63
*I couldn't get anything accomplished with her/him	0.75	0.69
I have confidence in her/his ability to get the job done	0.91	0.78
He/She is a typical goof-off when assigned a job to do	0.79	0.71
I would enjoy working on a task with her/him	0.88	0.79
*This person is lazy when it comes to working on a task	0.83	0.75
This person would be an asset in any task situation	0.88	0.74
I would recommend her/him as a work partner	0.92	0.84
I could rely on her/him to get the job done	0.92	0.86
This person takes her/his work seriously	0.82	0.78
*He/She is an unreliable work partner	0.71	0.78
*I could not count on the person to get the job done	0.81	0.73
*I could not recommend her/him as a work partner	0.85	0.81
Alpha Reliability	0.96	0.95

*Item polarity reversed prior to scoring

the formation of their perceptions of attraction, possibly even in the dimensionality of such perceptions. Consequently, it was thought desirable to obtain data from both a college student sample and a sample of other, older adults. An available sample of 374 college students enrolled in basic communication classes (median age = 19) and an available sample of 177 older adults, employed as teachers and/or administrators

Table 7 Item-Total Correlations for Social Attraction

Item	Teacher sample (<i>n</i> = 177)	Student sample (<i>n</i> = 374)
I think he/she could be a friend of mine	0.88	0.74
I would like to have a friendly chat with her/him	0.88	0.76
*It would be difficult to meet and talk with her/him	0.80	0.64
*We could never establish a personal friendship with each other	0.86	0.72
*He/She just wouldn't fit into my circle of friends	0.82	0.71
He/She would be pleasant to be with	0.80	0.72
He/She is sociable with me	0.55	0.70
*I would not like to spend time socializing with this person	0.76	0.68
I could become close friends with her/him	0.83	0.68
He/She is easy to get along with	0.76	0.68
*He/She is unpleasant to be around	0.53	0.59
*This person is not very friendly	0.62	0.66
Alpha Reliability	0.94	0.91

*Item polarity reversed prior to scoring.

Table 8 Item-Total Correlations for Physical Attraction

Item	Teacher sample (<i>n</i> = 177)	Student sample (<i>n</i> = 374)
I think he/she is handsome/pretty	0.87	0.82
He/She is sexy looking	0.70	0.66
*I don't like the way he/she looks	0.75	0.70
*He/She is ugly	0.67	0.69
I find her/him attractive physically	0.77	0.72
*He/She is not good looking	0.84	0.78
This person looks appealing	0.85	0.78
*I don't like the way this person looks	0.78	0.77
He/She is nice looking	0.88	0.81
He/She has an attractive face	0.82	0.82
*He/She is not physically attractive	0.79	0.72
He/She is good looking	0.87	0.82
Alpha Reliability	0.96	0.95

*Item polarity reversed prior to scoring.

in public schools, who were enrolled in off-campus courses concerning instructional communication (median age = 42; range 23–64) were selected for the study.

Administration

Participants in both sample groups were randomly assigned to a dyadic partner at the beginning of the course in which they were enrolled. If a participant knew the person to whom they were assigned previously, they were reassigned to a new partner. As a function of the classes in which they were enrolled, the participants interacted with their partner in a variety of dyadic and small group interaction exercises throughout the duration of the course. At the end of the course, after all exercises were completed, each subject was asked to complete the 38 item attraction scale on their partner. Response options were cast in a seven-point, strongly-agree to strongly-disagree format. All responses were anonymous and unavailable to the participant's partner.

Data analyses

The data analyses involved four steps: (1) factor analysis, (2) determination of interfactor correlations, (3) determination of item-total correlations, and (4) estimation of internal reliability.

Since previous research has indicated substantial correlations between unweighted scores on the three attraction dimensions, factor analysis with oblique rotation was chosen. Employing scree criteria, three-factor solutions were chosen from the analysis of the data from each sample. Although each item was found to have its highest loading (0.70+) on the intended dimension (the three dimensions obtained in each analysis could be labeled social, physical, and task), most items also generated

substantial loadings (0.40–0.60) on the other dimensions as well. It is clear, therefore, that while the three dimensions can be considered distinct from each other, they are definitely not independent of each other and should be expected to covary in many communication contexts.

Interfactor correlations were obtained on two bases, scores weighted by the oblique factor analysis and unweighted scores. The obtained correlations are reported in Table 9. The weighted and unweighted scores produced similar, high correlations. These results indicate that (1) the dimension scores share considerable covariance and (2) employing a weighting procedure of the type employed here reduces the degree of covariation only slightly. It is recommended, therefore, that future researchers employ unweighted scores (due to ease of scoring) and problems of colinearity in multiple regression analysis be overcome by appropriate decomposition procedures (McPhee & Seibold, 1979) rather than 'forcing' orthogonality on data that is generated from these scales. It is clear that attraction perceptions are not orthogonal. Employing statistical procedures that artificially induce such orthogonality will greatly inhibit meaningful interpretation of subsequent results.

Item-total correlations were computed for each dimension for each sample. The obtained correlations are reported in Tables 6–8. Although no *a priori* criterion was set for an acceptable correlation, an examination of the obtained correlations indicates that all items appear to be adequately related to their appropriate total. No item resulted in a correlation below 0.50 for either sample. It is recommended, therefore, that future researchers retain all of the items for each dimension.

Internal reliability α was estimated for each dimension. The obtained reliability estimates, ranging from 0.91 to 0.96, are reported in Tables 6–8. One additional point concerning reliability of these scales needs to be addressed. This point concerns test-retest reliability. We did not attempt to collect data addressing this issue because of our conceptualization of attraction. We do not see attraction as an enduring response of an individual (such as a personality trait). Rather we see the attraction one person feels for another to be susceptible to an ebb and flow, weakening and strengthening over time as a function of the interaction and relationship the two individuals share. Thus, any estimate of test-retest reliability would be artificially reduced by real changes in attraction that occur over time. It is important, therefore, that researchers who are attempting to predict attraction from some other variable(s) or to predict some other variable(s) from attraction be able to measure attraction as temporally

Table 9 Raw and Oblique Factor Correlations Among Scales

	Teacher sample		Student sample	
<i>Homophily</i>				
Attitude/Background	0.51	0.47	0.56	0.53
<i>Attraction</i>				
Social/Physical	0.57	0.51	0.63	0.48
Social/Task	0.78	0.66	0.61	0.54
Task/Physical	0.57	0.52	0.47	0.37

close to the measurement or inducement of the other variable(s) as possible. Any temporal lag would be expected to introduce error, not as a function of insufficient test-retest reliability of measurement of attraction, but as a function of real change in attraction between time of measurement and time of theoretical concern.

Homophily Scales

Generation of items

On the basis of the median reliabilities from the previous research, it was estimated that approximately ten items were needed for the attitude homophily dimension and approximately 16 for the background homophily dimension in order to attain consistent reliabilities above 0.90. The bipolar items recommended by McCroskey, Richmond, and Daly (1975) were converted to Likert-type items for this study. Additional items were constructed which were thought to be similar in content and structure to these items. A total of 17 items were employed for the attitude dimension, but only 10 items could be generated for the background dimension. All 10 were included in the final scale employed. (For a listing of all items, see Tables 10 and 11.)

Participants

The participants employed in this phase of the research were the same as those for the attraction phase discussed above, except that an additional 34 participants in the student sample completed these scales.

Administration

The homophily scales were administered to the participants at the same time and with the same instructions and response options as were the attraction scales. All responses were anonymous and unavailable to the participant's partner.

Table 10 Item-Total Correlations for Background Homophily

Item	Teacher sample	Student sample
This person is from a social class similar to mine	0.76	0.72
*This person's status is different from mine	0.65	0.57
*This person is from an economic situation different from mine	0.67	0.60
This person's background is similar to mine	0.68	0.73
This person's status is like mine	0.72	0.73
*This person is from a social class different from mine	0.75	0.75
This person is from an economic situation like mine	0.69	0.63
*This person's background is different from mine	0.68	0.66
This person and I come from a similar geographic region	0.36	0.42
This person's life as a child was similar to mine	0.46	0.47
Alpha Reliability	0.81	0.84

*Item polarity reversed prior to scoring.

Table 11 Item-Total Correlations for Attitude Homophily

Item	Teacher sample (<i>n</i> = 177)	Student sample (<i>n</i> = 374)
This person thinks like me	0.81	0.72
*This person doesn't behave like me	0.58	0.70
*This person is different from me	0.59	0.62
This person shares my values	0.70	0.60
This person is like me	0.85	0.75
This person treats people like I do	0.79	0.55
*This person doesn't think like me	0.84	0.71
This person is similar to me	0.87	0.76
*This person doesn't share my values	0.66	0.69
This person behaves like me	0.78	0.66
*This person is unlike me	0.84	0.71
*This person doesn't treat people like I do	0.73	0.63
This person has thoughts and ideas that are similar to mine	0.78	0.74
*This person expresses attitudes different from mine	0.78	0.67
This person has a lot in common with me	0.72	0.62
Alpha Reliability	0.95	0.92

*Item polarity reversed prior to scoring.

Data analyses

The data analyses involved the same four steps as those concerning the attraction data: (1) factor analysis, (2) interfactor correlations, (3) item-total correlations, and (4) estimation of internal reliability.

Since previous research has indicated that the two dimensions of homophily are correlated, factor analysis with oblique rotation was chosen. Employing the same criteria as employed with the attraction data, two-factor solutions were chosen from the analysis of the data from each sample. Each item was found to have its highest loading on the intended dimension (labeled attitude and background), however, most items generated substantial loadings on the other dimension as well. Thus, although these two dimensions can be considered distinct from each other, they are not independent. As is the case with attraction, the two dimensions of homophily should be expected to covary in many communication contexts.

The obtained interfactor correlations, based on both unweighted scores and scores weighted by the oblique factor analysis, are reported in Table 9. All of these correlations were similar and high. It is obvious, as it was with the attraction results, that the two dimensions of homophily share considerable covariance and the magnitude of that covariance is affected little by the methods of computing the dimension scores (weighted or unweighted). Our recommendations for future researchers employing the attraction scales apply to the use of the homophily scales as well, so we will not reiterate them here.

The obtained item-total correlations for each sample are reported in Tables 10 and 11. Although no *a priori* criterion was set for an acceptable correlation, an

Table 12 Correlations Between Homophily and Attraction Dimensions

Attraction dimension	Teacher sample ($n = 177$)		Student sample ($n = 374$)	
	Background	Attitude	Background	Attitude
Social	0.41*	0.76*	0.38*	0.57*
Physical	0.25*	0.45*	0.28*	0.41*
Task	0.24*	0.62*	0.28*	0.42*

* $p < 0.001$.

examination of the obtained correlations indicates that most items appear to be adequately related to their appropriate total. Possible exceptions to this conclusion are items 9 and 10 on the background scale. However, supplementary analysis indicated that the reliability of the scale with these items omitted is lower than with them included. Hence, we advise keeping these items.

The internal reliability estimates for each dimension for each sample are reported in Tables 10 and 11. While the reliability estimates for the attitude dimension are quite satisfactory, those for the background dimension are only moderate. While this was expected on the basis of our earlier projected need for more items, it is disappointing nevertheless. Although additional work with this scale may permit additional improvement in reliability, the difficulty in generating appropriate items may make such efforts more difficult than the value of improved reliability would justify. Perceptions of another person's background may be less susceptible to reliable measurement. In any event, the reliabilities obtained in this study suggest that the scale can be employed with reasonable confidence for most research purposes.

Intercorrelations of Scales

Table 12 reports the correlations between scores on the attraction dimensions and scores on the homophily dimensions. The relationships vary from moderate to high. The correlations for the two samples are very similar for all of the relationships with the background dimension of homophily and for the relationship between physical attraction and attitude homophily. However, the relationships between attitude homophily and both task and social attraction are substantially higher for the teacher sample than the student sample. These relationships are consistent with the theoretical link between homophily and attraction. Clearly, knowledge of perceived homophily will permit predicting substantial variance in perceived attraction.

Conclusions

Previous research has indicated that both attraction and homophily are multi-dimensional constructs for which first-generation measures are available. These

measures have registered moderate internal reliability, but lower reliabilities have been observed when shorter versions of the measures have been employed. Similarly, most of the available studies that have used the original (all items) versions of both the attraction and homophily scales have found results consistent with expectation and/or hypotheses. However, exceptions were found, which usually were associated with studies that used reduced versions of the original measures. The research results discussed above point to their validity when the full versions of the measures are used.

The present research produced second-generation measures with substantially improved internal reliability. Although their validity has yet to be tested directly, because they have been built on the foundation of the earlier measures, they should be at least as valid as the original instruments. Consequently, these new instruments are suggested for use by researchers concerned with attraction and/or homophily when studying participant samples from populations of college students or other mature adults.

Caution should be taken when considering reducing the number of items on these measures. While it is well known theoretically that fewer items may reduce internal reliability, in this case this concern is not just theoretical, it has been clearly demonstrated. Reducing the number of items employed will result in lower reliability (and validity) and attenuation of any results observed. This will mean that variance accounted-for reports, which many journals mandate, will be attenuated. Unless those relationships are disattenuated, estimates of effect sizes will be understated.

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