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dissertation entitled

The Effect of Attitude Similarity On Interpersonal Attraction: A Meta-Analysis

presented by

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has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Communication

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Date 7/2/96

ABSTRACT

THE EFFECT OF ATTITUDE SIMILARITY ON
INTERPERSONAL ATTRACTION: A META-ANALYSIS

By

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This dissertation performed a meta-analysis on the effect that attitude similarity has on interpersonal attraction. While attitude similarity is the extent to which people share common attitudes, interpersonal attraction is the degree to which people like others and has been typically measured by Byrne's two-item interpersonal attraction measure. Byrne's interpersonal attraction measure includes an item asking subjects to rate how much they like another target person and an item asking subjects to estimate how much they would enjoy working with the target other.

This dissertation tested three hypotheses. The first hypothesis predicted a positive relationship between the percentage of agreement of attitude similarity items and ratings of interpersonal attraction across studies. The second hypothesis predicted a positive relationship between the number of attitude items employed across studies and ratings of interpersonal attraction. The final hypothesis predicted that interpersonal interaction would moderate the effect that attitude similarity has on interpersonal attraction.

Eighty studies were used in this meta-analysis with a total of 92 effect sizes. To standardize effect sizes across studies, each study finding was converted into a correlation prior to the analyses and corrected for error of measurement.

The findings indicate that percentage of agreement was an important contributor in explaining variance across studies, while the number of attitude items was not. Additionally, two findings were revealed with respect to the effect that initial interpersonal interaction has on the relationship between attitude similarity and interpersonal attraction. In the comparison between the no-interaction and interaction conditions, interpersonal interaction was found to moderate the effect of attitude similarity on interpersonal attraction. In an analysis of the interaction conditions only, it was revealed that interpersonal interaction initially (5-minute interactions) eliminated the effect that attitude similarity has on interpersonal attraction, but over time (interactions greater than 5-minutes, but not exceeding 30-minutes), an effect was found.

# ACKNOWLEDGEMENTS

Many people assisted me in the completion of this dissertation. I would like to take this opportunity to thank them:

Gary, Annie, and the nice folks at Mt. Pleasant - Through your wisdom I learned the true meaning of probability.

Marge - You always kept me out of trouble, therefore I begrudgingly reliquish my duties as office sitter. Thanks for all of your help.

Linda - The best raquetball partner a friend could have. Thanks for putting up with me, keeping me on my toes, and letting me win a few.

Ron, Jack, and Frank - Taking your classes and having you on my committee made me a better scholar and person. Thanks for your guidance and support. Because of you, I leave MSU with a lifetime of knowledge.

Mom and Dad - You were there when I needed you. Thank you for your support and in providing me with the work ethic that I needed to complete my education.

Sandi - I couldn't have asked for a better advisor. Thanks for the research team experience, teaching experience, and for the help on my dissertation. Most importantly, thank you for being a friend.

Monique - You're my best friend. Thanks for the support while I wrote this dissertation and for the help in the final stages. You made my dissertation experience an enjoyable one.

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# INTRODUCTION

While some posit that the most established and well-known finding in the interpersonal literature is that attitude similarity creates interpersonal attraction (Berscheid & Walster, 1983; Cappella & Palmer, 1990; De Wolfe & Jackson, 1984; Fishbein & Aijzen, 1972; Parks & Adelman, 1983), others contend that this belief is unfounded (Sunnafrank, 1992) and have gone so far as to pronounce the issue dead (Bochner, 1991). Clearly, extreme differences exist in the perceived effect that attitude similarity has on interpersonal attraction.

Although several narrative accounts have explored the effect that attitude similarity has on interpersonal attraction (Byrne 1969; Byrne & Griffitt, 1973; Byrne, Clore, & Smeaton, 1986; Simons, Berkowitz, & Moyer, 1970), these summaries are limited to historical reviews of the progression of research in this area. As such, these accounts offer little assistance in resolving whether attitude similarity enhances interpersonal attraction.

In an effort to explore the differences in opinion with regard to the effect that attitude similarity has on interpersonal attraction, *Communication Monographs* invited scholars (Byrne, 1992; Sunnafrank, 1992) holding different views to discuss their ideas. While Byrne maintained in his *Communication Monographs* article that attitude similarity increases interpersonal attraction, Sunnafrank countered in his article by arguing that the effect of attitude similarity on interpersonal attraction disappears in normal developing relationships. Unfortunately, these articles did little to bridge the gap

in ideological differences. In fact, research continues without apparent resolve (Tan & Singh, 1995).

This dissertation will illuminate some of the issues in the attitude similarity debate by employing a meta-analytic approach to the attitude similarity literature. Performing a meta-analysis on this literature will yield valuable findings. In particular, it will provide a cumulative examination of the effect that attitude-similarity has on interpersonal attraction and provide an opportunity to test variables which may moderate the relationship between attitude similarity and interpersonal attraction.

More specifically, this dissertation will present the uncorrected and corrected effect size (correlation coefficient) between attitude similarity and interpersonal attraction, assess the effect that differences in the manipulation of attitude items across studies have on the relationship between attitude similarity and interpersonal attraction, test the extent to which initial interaction moderates the effect that attitude similarity has on interpersonal attraction, and conclude with future research that should be conducted in the attitude similarity and interpersonal attraction domain.

In addition to providing a more detailed account of the research concerning the effect of attitude similarity on interpersonal attraction, using a meta-analytic approach is warranted for several reasons. First, at the individual study level, sampling error exerts a significant toll on findings (Hunter & Schmidt, 1990). Meta-analysis aids in overcoming sampling error by combining findings from many studies and weighting them by their sample size. As such, the effect size obtained from a meta-analysis is a more accurate estimate of the actual effect size than findings from any individual study. Second, meta-

analysis allows for a summed effect size that is corrected for error of measurement. Given that error of measurement systematically lowers the correlation, meta-analysis allows for the cumulation of studies as if they had perfect measurement. Finally, meta-analysis enables the identification of moderating variables in the literature. If there is variance in the effect sizes across studies, meta-analysis provides the tools to determine if these differences are artifactual (Hunter & Schmidt, 1990). If the differences are not artifactual, potential moderating variables can be examined by dividing studies into appropriate conditions.

While meta-analysis is useful in cumulating findings across studies, it has several limitations. First, it is constrained to examining only variables that have been previously addressed by researchers. Consequently, while important relationships between variables may be hypothesized, meta-analysis cannot test these relationships unless it has previously been examined by others. Second, if potential moderating variables are discovered in the literature, a distribution of studies into appropriate subgroups may provide unequal comparisons. For example, while one subgroup may have many studies to estimate an effect size, its counterpart subgroup may be limited to only a handful of comparison studies. As such, while one subgroup may produce a very stable estimate of an effect size, another subgroup made up of only a few studies may produce a less stable estimate of an effect size.

## LITERATURE REVIEW

As early as the fourth century B.C., Aristotle suggested that friends regard the same things as good and evil (translated, 1932). Working from the similarity principle

introduced by Aristotle, Pearson and Lee (1903), conducted a correlational study using the variable of attitude similarity. Their findings revealed high similarities between spouses with respect to their attitudes on a host of items. Following Pearson and Lee's study, several researchers successfully replicated their initial findings (Hunt, 1935; Kirkpatrick & Stone, 1935; Morgan & Remmers, 1935; Newcomb & Svelha, 1937; Schiller, 1932; Schooley, 1936).

Winslow (1937) extended the correlational analysis beyond spouses and attitude similarity. In his study on friends, he found high positive correlations between the attitudes of friends. Later research replicated Winslow's findings (Richardson, 1940).

By 1960, research concerning attitude similarity and close relationships merely examined the extent to which people in close relationships, e.g., spouses and friends, held similar attitudes. In an attempt to broaden the understanding of the potential effects of attitude similarity, Newcomb (1961) studied the effect of attitude similarity on attraction longitudinally. In his study, Newcomb assembled groups of housemates and asked them to complete attitude questionnaires. By collecting interpersonal attraction data on all housemates toward one another at several time points, his findings revealed that attitude similarity predicted attraction in later relational stages, but not early ones.

In an attempt to explain his findings, Newcomb suggested that people lack adequate attitudinal information upon which to make inferences about others in the early stages of relationships. As such, people become information gatherers, seeking to obtain enough attitudinal information to make interpersonal attraction judgments. Therefore, he suggested that people in the initial stages of a close relationship will not be more

interpersonally attracted to attitudinally similar others in comparison to dissimilar others, because they have not revealed that they hold similar attitudes.

According to Newcomb, if people spend considerable time with one another, e.g., roommates, they obtain sufficient attitudinal information to enable them to make adequate assessments about interpersonal attraction. Consequently, in long term relationships, individuals will regard attitudinally similar others as interpersonally attractive and attitudinally dissimilar others as interpersonally unattractive.

All of the research regarding attitude similarity and interpersonal attraction prior to Byrne's research (1961) was correlational. One problem with correlational data is that the interpretation of causality in not always clear. Attempting to prove that attitude similarity enhances interpersonal attraction, social scientists embarked upon a research program in which they experimentally induced attitude similarity and subsequently assessed the extent to which people were interpersonally attracted to attitudinally similar others.

Research concerning attitude-similarity and interpersonal attraction has followed a similar pattern (Byrne, 1992; Cherry, Byrne, & Mitchell, 1977; Bond, Byrne, & Diamond, 1968; Byrne, Griffitt, & Golightly, 1966; Byrne & Griffitt, 1966; Byrne, Ervin, & Lamberth; 1970, Curran & Lippold, 1975; Griffitt, 1969). Typically, subjects completed a host of questions designed to represent their attitudes. Items used to assess attitudes measured issues such as school desegregation, politics, gardening, birth control, dating, and the advisability of freshman having cars on campus (Byrne & Rhamey, 1965). About one week after subjects completed attitude questionnaires, they were asked to

evaluate their interpersonal attraction toward a bogus stranger given a list of the same attitude items that the stranger supposedly completed previously. To induce varying levels of attitude similarity, answers from the bogus stranger's attitude items were varied such that they were highly similar, e.g., six similar and two dissimilar or highly dissimilar, e.g., two similar and six dissimilar to the subject's responses to the same attitude items. Finally, subjects reported judgments of interpersonal attraction toward the bogus stranger.

Byrne and Griffitt (1973), define interpersonal attraction as an individual's affective evaluation of another, and interest in interpersonal attraction has received attention by communication scholars for two primary reasons. First, interpersonal attraction is positively related to the extent to which people communicate with others. Consequently, interpersonal attraction is one antecedent to predict communication partners that people have. Second, interpersonal attraction is positively related to the amount of influence that others have on us in interpersonal exchanges (Berscheid & Walster, 1969). As such, interpersonally attractive others can potentially play an influential role in our behaviors. Given the significance of interpersonal attraction in our lives, research concerning this variable is important.

Predominantly, researchers have measured interpersonal attraction through the sum of two seven-point Likert-type items taken from Byrne's Interpersonal Judgment Scale (Byrne, 1971). The interpersonal attraction items ask subjects to report the extent to which they (1) like a target person and (2) would enjoy working with a target person. After conducting and reviewing a host of studies using the bogus stranger technique in

which attitude similarity was induced, Byrne and Nelson (1965) proposed a linear function of $Y = 5.44X + 6.62$ to describe the effect of attitude similarity (X) on attraction (Y).

A series of studies which followed the introduction of Byrne and Nelson's proposed linear function appeared to offer support (Cherry, Byrne, & Mitchell, 1976; Bond, Byrne, & Diamond, 1968; Byrne, Griffitt, & Golightly, 1966; Byrne & Griffitt, 1966; Byrne, Ervin, & Lamberth; 1970, Curran & Lippold, 1975; Griffitt, 1969). Consequently, Byrne (1992) reported that a lawful relationship exists between attitude similarity and interpersonal attraction. However, some studies have reported findings which are inconsistent with the linear function proposed above (Curran & Lippold, 1975; Sunnafrank, 1983; Sunnafrank, 1984, Sunnafrank, 1985; Sunnafrank, 1986; Sunnafrank & Miller, 1981).

There are two major arguments against the lawful relationship that has been proclaimed between attitude similarity and interpersonal attraction. The first posits that communication is a moderator that eliminates the effect that attitude similarity has on interpersonal attraction (Sunnafrank, 1986; Sunnafrank, 1985; Sunnafrank, 1984; Sunnafrank & Miller, 1983), by making attitudinally dissimilar others appear more interpersonally attractive during interaction processes.

A second explanation is the repulsion hypothesis (Rosenbaum, 1986). According to the repulsion hypothesis, attitude similarity does not heighten interpersonal attraction, because similarity is expected. However, the discovery of attitude dissimilarity is

unexpected and aversive, resulting in interpersonal repulsiveness which decreases interpersonal attractiveness.

In short, the repulsion hypothesis suggests that the important relationship is not between attitude similarity and interpersonal attraction, but between attitude dissimilarity and interpersonal repulsion. While some research has been conducted to test the repulsion hypothesis (Rosenbaum, 1986), at present an insufficient amount of evidence is available to confirm it as a plausible explanation. In particular, the testing of the repulsion hypothesis requires a no-attitude information condition to provide an accurate test, which has not been sufficiently addressed (Byrne, 1992).

A final way to examine the relationship between attitude similarity and interpersonal attraction is to propose the opposite path, that interpersonal attraction increases attitude similarity between interactants (Berscheid & Walster, 1983; Stephen, 1985). However, an insufficient number of studies (k=12) have been performed to examine this relationship adequately. Consequently, the only attention given to the idea that interpersonal attraction produces greater attitude similarity is in the final chapter regarding future research.

## THEORY AND HYPOTHESES

As suggested previously, meta-analysis is useful in understanding large bodies of research examining the same variables. This study provides a rationale to predict differences in effect sizes across studies with regard to the percentage of agreement when inducing attitude similarity, the number of items used in the attitude similarity induction, and the effect that interaction has as a moderating variable between attitude similarity and

interpersonal attraction. Each of the above differences are discussed in turn and predictions of their effects are presented.

Strength of the Attitude Similarity Manipulation

According to Byrne's (1969) reinforcement-affect model of attraction, people have more positive affective responses toward people holding similar attitudes, because they like people who view the world in the same way. In short, Byrne's reinforcement-affect model suggests a positive linear relationship between perceived attitude similarity and interpersonal attraction.

Within the attitude similarity research there is extreme variation in the percentage of agreement in the manipulation of the attitude similarity variable. For example, Singh's (1975) study was designed such that subjects in the attitude similar condition agreed on all of the items and subjects in the attitude dissimilar condition did not agree on any of the items. In contrast, Tesser's (1971) study was designed such that subjects in the attitude similar condition agreed on two-thirds of the items and subjects in the attitude dissimilar condition agreed on one-third of the items.

If Byrne's model is accurate, then variation in perceived similarity should be directly related to the degree in which people assess the interpersonal attractiveness of another. More specifically, given that there are differences in the degree to which people are presented as attitudinally similar, the greater the percentage of agreement, the greater effect it should have on interpersonal attraction.

A second reason to expect that the greater percentage of agreement in the attitude similarity manipulation will be positively related to its corresponding effect size is with

regard to restriction in range. Because restriction in the range of an independent variable systematically attenuates the effect on the dependent variable, it follows that as the range or percentage of agreement between the attitude similarity and dissimilarity variable increases, it will produce a greater effect on the dependent variable of interpersonal attraction. Given the apparent relationship between the percentage of agreement used in the attitude similarity manipulation and its effect on a person's judgment of interpersonal attraction, the following hypothesis is offered.

H1: As the difference in percentage between attitude similar and dissimilar conditions increases across studies, so will the correlation between attitude similarity and interpersonal attraction.

Number of Attitude Items

One reason to expect that the number of attitude items used in a study will influence the extent to which others are perceived as interpersonally attraction is the idea that some issues are more important to people than others. For example, an extremely religious person who is disinterested in sports will weigh attitude similarity on the belief that God exists as more important than the belief that Big Ten basketball teams are generally better than Pac Ten basketball teams.

One area where topic or issue importance has been studied is in the persuasion literature. For example, prior research has shown that as an issue becomes more salient to an individual, it increases their motivation to listen to messages concerning that particular topic (Petty & Cacioppo, 1979; Petty, Cacioppo, & Goldman, 1981; Petty, Cacioppo, & Schumann, 1983). Consequently, item importance appears particularly relevant to this dissertation in that some issues, those that are deemed important by

individuals, will receive greater attention and serve as a stronger cue in assessing the interpersonal attraction of others.

A persuasion theory addressing the relative importance of particular issues to individuals is the Theory of Reasoned Action (Fishbein & Ajzen, 1975). According to the theory of reasoned action, important attitudes or beliefs are given greater weight than less important ones in a person's decision making process.

The idea that people give more weight to important issues has been addressed by research. For example, Warshaw (1980) examined the decision making process with regard to consumer purchases. In this study, subjects were asked to make a list of favorable and unfavorable reasons to make a certain purchase decision. In some cases, it was revealed that although subjects listed more unfavorable reasons than favorable ones, they still had intentions to make the purchase. The author of this study maintained that in these cases, a few highly weighted favorable purchase reasons were strong enough to outweigh a greater number of lower weighted unfavorable purchasing reasons.

In another study researching the idea of the weighting of important issues, Bowman and Fishbein (1978) examined individuals' attitudes toward an Oregon nuclear safeguard initiative. This study revealed that an indicator of voting behavior was the weight that people placed on reasons to vote for or against the initiative. That is, the stronger the weight of a belief about the initiative, the greater effect it had on a person's overall voting decision.

The idea that people weigh certain attitudinal items as more important than others when making interpersonal judgments of others seems reasonable. For example, consider

a likely dilemma that two friends may face with the respect to their attitudes toward military spending, drug legalization, and abortion. While the pair may attitudinally differ on issues that they consider unimportant, such as military spending and the need for drug legalization, they may agree on an extremely important issue to them such as abortion. In this case, attitude similarity on the abortion issue would likely have greater weight than on the issues in which there is dissimilarity. Consequently, although there is overall attitude disagreement (assuming that there are only three attitude issues in this relationship), it is likely that these friends would still find each other interpersonally attractive.

So why should it be expected that the number of items used in a study will explain varying effect sizes of interpersonal attraction found across studies? One possible explanation is that as the number of attitude items increases in a study, so does the opportunity for people to agree or disagree on an issue that is important to them. Additionally, if attitudes are revealed on issues that a person regards as important, then he/she is likely to use this information to form a stronger judgment of interpersonal attraction than another who fails to uncover information about a topic that is important to them.

Numerous studies have shown a positive relationship between the amount of information that people have about others and their willingness to make inferences about them (Condon & Crano, 1988; Schwartz & Smith, 1976; Yabrudi, 1978). Several theories, such as Uncertainty Reduction Theory (Berger & Calabrese, 1975), have attempted to explain the above relationship.

According to Uncertainty Reduction Theory, a primary concern of people when dealing with strangers is to increase their predictive power of a stranger's behavior. In presenting their model of uncertainty reduction, Berger & Calabrese maintain that there is a positive relationship between communication and the reduction in uncertainty, because communication increases the amount of information we have about others. Applied here, this would suggest that as the number of attitude items used in a study increases, the certainty of making inferences about others would increase, resulting in stronger interpersonal attraction judgments.

For example, consider that a person meets two strangers at the same time and engages in a discussion of attitudes. If at the end of the discussion ten attitudes are known about one of the strangers and only one attitude is known about the second one, it seems reasonable to expect that there would be differential certainties about perceptions that would be held about these strangers. More specifically, it is likely that the above person would feel more confident and more likely to make a strong interpersonal judgment based on the attitudes toward the stranger revealing his or her attitudes on ten issues over the other revealing only one attitude. Given that information is an important element in reducing uncertainty, it seems reasonable to expect that people will be more certain and will consequently make stronger judgments about the interpersonal attraction of others as they receive more information about them.

Another reason that more information about another's attitudes is expected to be positively related to a person's judgment about them is with respect to consistency theories. In the most general sense, consistency theories suggest that people seek to

maintain consistency across attitudes they hold. As such, people experience internal tension when they view others similar to themselves negatively or dissimilar others positively. In order to avoid internal tension, it is argued that people will adapt either their attitudes or attraction judgments about others who appear similar or dissimilar in order to maintain a consistent world view (Festinger, 1957; Heider, 1946; Osgood & Tannenbaum, 1955). Because attitudes are somewhat enduring (Trenholm, 1989), a person realizing inconsistency between their attitudes and interpersonal judgments is more likely to realign their interpersonal judgments when there are discrepancies between their attitudes about issues and interpersonal judgments of others. In the present scenario, this means that if one has more information about another's attitudes, then they will more likely change their interpersonal attractions as opposed to their attitudes when presented with inconsistencies. For example, if a horse race enthusiast dislikes another person interpersonally and subsequently discovers that the disliked other is also a horse race enthusiast, then it is more likely that this person would realign their interpersonal attraction judgment instead of their attitude toward horse racing. Given the notion of consistency, it seems reasonable that people will have stronger judgments of interpersonal attraction towards another as they receive greater amounts of information concerning their attitudinal similarity/dissimilarity.

A final reason that more attitude items might result in a greater corresponding interpersonal attraction judgment is with regard to the reliability phenomena. That is, as the number of items increase in a measure, so does its subsequent reliability of that measure. Consequently, when two variables are correlated with one another and the

reliability of one of those variables is increased, by definition, so will the correlation between those two variables.

More specifically, as the number of attitude items increases, the reliability of the attitude similarity variable increases. Therefore, if attitude similarity and interpersonal attraction are correlated with one another, then the correlation between these variables will be greater as the reliability of the attitude measure increases.

Because considerable variance exists in the number of attitude items used across studies examined in this meta analysis (seven to 56) and that information quantity can be expected to effect interpersonal judgments of others, the following hypothesis is presented:

> H2: As the number of attitude items used in a study increases so will the correlation between attitude similarity and interpersonal attraction.

Initial Interpersonal Interaction

Several studies (Sunnafrank, 1983, 1984; Sunnafrank & Miller, 1981) have varied their research from the typical bogus-stranger technique employed in the attitude similarity-interpersonal attraction research by adding the variable of interaction. For example, Sunnafrank (1983, 1984) first had subjects complete attitude inventories. Subsequently, attitude similar or dissimilar partners were formed and provided with the attitude inventory completed by their partner. After reading their partner's attitude inventory items, couples were brought together and they engaged in a 5-minute get-acquainted interaction. Upon completion of the 5-minute interaction, interactants were

separated and asked to complete measures of interpersonal attraction towards their partner. Each of the dyads used here were same-sex pairs.

In another series of studies researching the effect that interaction has on the relationship between attitude similarity and interpersonal attraction, such as Curran and Lippold (1975) had subjects complete attitude similarity measures. Based on the completed measures, subjects were apportioned into either attitude similar or dissimilar conditions. Subsequently, partners were provided with sufficient funds to go on a 30-minute "coke date" where they were given the chance to interact with one another outside of the laboratory setting. After their "coke date", subjects were asked to complete a measure of interpersonal attraction toward their partner. Each of the "coke date" dyads were opposite sex partners.

Two key elements in the above studies make them different from Byrne's typical bogus-stranger research technique. The first, is the presence of interaction. The second, is that there were true attitude agreements or disagreements with real others. Consequently, the question here is whether these differences will moderate the relationship between attitude similarity and interpersonal attraction?

The first reason to expect that initial interaction will influence the effect that attitude similarity has on interpersonal attraction is because in normal initial interactions, attitudes are usually not uncovered. Given the lack of attitude information, it cannot be used as a judgment of interpersonal attraction. In their work on the types of information revealed in initial interactions, Berger & Calabrese (1975) introduced their proposed stages of interaction. According to them, the first stage that people encounter is the entry

phase. In this phase, people are governed by social norms and rules, which limit conversation to low risk topics such as demographic information. Although attitude information may be explored in this phase, it is not information typically central to a person and tends to concern low involvement issues.

A more specific analysis of the types of information that people expect to be revealed in initial interactions has been conducted by Berger, Gardner, Clutterbuck, and Shulman (1976). In their study, subjects read a list of 150 preselected topics and placed them into 15 minute time blocks as to when they thought these topics would be discussed. Their study revealed that only informational background topics were expected to be discussed in the first 15 minutes of interaction, relatively few and innocuous attitude topics were expected to be discussed between fifteen to thirty minutes, e.g., the Bears are a lousy football team, and more attitude relevant items were expected to be discussed after 30 minutes, e.g. Any American who is a communist should be deported from the country.

Expecting that attitude similarity will not influence interpersonal attraction in the early stages of new relationships is not a new discovery. In fact, Newcomb (1961) found that attitude similarity had little effect on the attraction of housemates in the early stages of their relationship, but was an important one in later stages.

A second reason to expect that interaction will suppress the effect of attitude similarity on interpersonal attraction regards the richness of different types of communication. In their writings on media choice, several researchers have maintained that face-to-face interaction is the richest medium and that written communication is one

of the poorest (Daft, Lengel, & Trevino, 1987; Sitkin, Sutcliffe, & Barrios-Choplin, 1992). Therefore, many nonverbal cues come in to play that might affect interpersonal attraction.

Why would the fact that face-to-face interaction is a richer form of communication than written communication lend support to the idea that interaction will moderate the relationship between attitude similarity and interpersonal attraction?

The first reason to expect a difference is that attitude similarity researchers have varied the level of communication. For example, in the bogus-stranger method, the only communication about another was the written communication (attitude inventory of another). In other attitude similarity research, there has been the traditional written communication and a rich face-to-face interaction.

In particular, when presented with face-to-face interactions, people perceiving that the interaction will be potentially aversive will increase positive non-verbal cues, such as smiling to facilitate a more pleasant interaction. In their work on interpersonal expectancies, Ickes, Patterson, Rajecki, and Tanford (1982) provided subjects with information about another subject and were informed that they would be asked to engage in a future interaction with this person. In the study, subjects were lead to believe that they would either have a future interaction with a friendly or unfriendly other. Given that people infer that attitudinally similar others are likely to be friendly and dissimilar ones will be unfriendly, this study appears to relate reasonably well to the variable of attitude similarity (Byrne, 1961). The results of this study revealed that when subjects interacted,

those in the unfriendly condition (negative expectations) smiled more at their partner than those in the friendly condition (positive expectations).

In the second study conducted by Ickes, Patterson, Rajecki, & Tanford (1982), subjects were provided with a host of items revealing that they were similar or dissimilar in personality to another subject and then the pair was brought together and asked to engage in discussion. Similar to the first study, when subjects subsequently interacted, subjects holding negative interaction expectations (those perceived as being dissimilar in personality) smiled at their partner with greater frequency than subjects holding positive interaction expectancies (those being perceived as being similar in personality).

Cappella and Palmer (1990) present the most specific research on the relationship between attitude similarity and smiling. Their findings were consistent with the idea that attitudinally dissimilar partners smile more at one another. In particular, they found that attitude similarity was negatively related to smiling toward one's interacting partner.

Although research is mixed on the effect that smiling has in making judgments about others, most authors maintain that it is negatively related to the perception of others only when it is perceived that the smiling is being used as a mask to deceive (Mehrabian, 1971). Because there is no apparent reason why people would initially expect another to deceive them in a non-persuasive situation, such as an initial introduction conversation, then this effect seems unlikely in the studies examined in this dissertation.

Research examining the potential positive effects of smiling in situations where interactants approach the interaction with negative expectancies show that subjects may use nonverbal involvement, such as smiles, to make the interaction more pleasant

(Rosenfeld, 1966). Consequently, if subjects leave the initial face-to-face interaction with a pleasant feeling about the other, they might weigh this as a stronger cue to make a judgment of interpersonal attraction than the fact that they have attitudinal differences. Additionally, the effect of smiling in face-to-face interactions may be strong enough to increase judgments of interpersonal attraction with dissimilar others to levels found with similar others.

Another reason to expect that smiling might lessen the effect of negative feelings toward dissimilar others is with regards to mimicking. Dabbs (1969) found a positive correlation between similar non-verbal behaviors such as leaning forward, touching shoes, and fidgeting and liking. Therefore, if subjects perceive that smiling by an attitudinally dissimilar other is mimicking their own smiling, then they would be more interpersonally attracted to them in comparison to an attitudinally dissimilar non-interacting other.

A third reason to expect that initial interpersonal attraction will lower the effect that attitude similarity has on interpersonal research concerns conversational goals and societal norms that people operate under. More specifically, in initial face-to-face interactions, people are generally pleasant. Consequently, the positive effects of initial interactions may work to suppress potential negative feelings that people may hold toward attitudinally discrepant others.

In their research on initial interactions, Burleson and Denton (1992) suggested that people engaged in initial interactions are just trying to enjoy the interaction. Since

most people dislike confrontation, people are likely to highlight their similarities and downplay dissimilarities, which could potentially inflate perceived similarity by partners.

Brown and Levinson's theory of politeness (1978) addresses the norms of initial interaction. According to Brown and Levinson, in initial interactions people seek to establish common ground with others by selecting only safe conversational topics. If people only discuss "safe topics" in initial interactions, they could potentially leave that initial interaction with the belief that future interactions would follow a similar pattern. Consequently, the polite discussion would seem likely to mitigate the effect of any discrepant attitudinal information that people receive about others prior to an initial interaction period.

Another way that politeness might mitigate the effect that attitude similarity has on interpersonal attraction is through the selection of topics on which the interactants share similar views. That is, by avoiding potential conflicts that may arise from issues that they disagree on, interactants may inflate perceived similarity by only discussing topics that they agree upon. If perceived similarity is inflated in the attitude dissimilar conditions, it could eliminate any differences in perceived dissimilarity that may have existed prior to the interaction.

The effect of initial interpersonal interaction on the relationship between attitude similarity and interpersonal attraction can be examined in two ways. First, limited interactions, e.g., interactions lasting fewer than 30-minutes, create situations where few attitude issues are uncovered and even if they are uncovered, social norms cause people to downplay these dissimilarities. Consequently, in initial interpersonal interactions, the

effect of attitude similarity on interpersonal attraction should be lower than when no interaction is present, because forces are acting to mitigate the effect of attitudinal disagreements. Therefore, the following hypothesis is presented:

$H_{3a}$: Interaction between people will moderate the effect of attitude similarity on interpersonal attraction, such that the correlation between them will decrease.

While the effect of attitude similarity on interpersonal attraction will be attenuated in initial interpersonal interactions due to social forces such as initial interaction norms and the lack of attitudinal information, these factors will be overcome as interaction increases. In particular, if Berger & Calabrese (1976) are correct in their idea that time elapsed in a relationship will result in more attitudinal knowledge of others and if attitude similarity is indeed an indicator of interpersonal attraction, then the effect of attitude similarity, at least in the initial stages of interaction should be positively related to judgments of interpersonal attraction. Therefore, the following hypothesis is presented:

$H_{3b}$: The effect of attitude similarity on interpersonal attraction will increase as time elapses in initial interpersonal interactions.

## METHODS

### Study Selection

Relevant studies were obtained by initially starting with the Byrne and Sunnafrank's articles published in *Communication Monographs* in 1992. All relevant articles from the bibliography of these articles were obtained and the bibliographies of these studies were searched. The bibliography searching process continued until no

further germane articles were obtained. Using the method of the bibliography search yielded a diverse number of sources, including: *Communication Monographs, Human Communication Research, Human Relations, Journal of Applied Social Psychology, Journal of Experimental Research in Personality, Journal of Personality, Journal of Personality and Social Psychology, Journal of Research in Personality, Journal of Social Psychology, Psychological Reports, Social Cognition, and The Western Journal of Speech Communication.*

Additionally, the *Social Science Citation Index* and computer-based searches in PSYC INFO (Psychology Literature) and ACAD (Expanded Academic Index) were searched using the keywords of attitude similarity and attraction. The initial search yielded 134 studies that could potentially be used in this meta-analysis. The list of obtained studies through the process used here might not be a complete coverage of all studies, but given the large number of studies collected, it is unlikely that a few omitted studies would change the general conclusions of this study.

Criteria for Study Inclusion

First, the study had to focus on the relationship between attitude similarity and interpersonal attraction in order to be included in this study. Examples of studies that were excluded given the criterion established here included those measuring the effect of personality similarity (Atkinson & Schein, 1986) or use of non-interpersonal attraction measures as the dependent variable (Coombs & Chang, 1981). 42 of all of the studies collected were excluded by this criterion.

Second, each study was required to include original data. Articles reviewing or re-reporting data were not included in the selection process (Byrne, 1992). Seven of all of the studies collected were excluded by this criterion.

Finally, studies failing to provide sufficient information to allow computation of the correlation between attitude similarity and interpersonal attraction was excluded. For example, Curran's (1973) study was excluded from analysis. Although he researched attitude similarity and interpersonal attraction, he did not provide the sufficient statistical information necessary to reproduce the correlation coefficient. Five of all of the collected studies were excluded by this criterion. Given the above criteria to include studies in this meta analysis, 80 studies remained leaving 92 effect sizes for the analyses (See appendix A).

Methods

The general meta-analytic approach used in this dissertation is that presented by Hunter, Schmidt, and Jackson (1982). Essentially, the procedures advanced by Hunter et al. involves the estimation of effect sizes between the variables being examined. After each of the effect sizes for individual studies are obtained, they are weighted by sample size and cumulated.

To provide a standard measure across studies, each of the findings were transformed into correlation coefficients. The primary source for transforming F values to correlations was Hunter's FTOR program. When transforming other statistics (e.g., t-tests) the formulas presented by Hunter et al. (1982) were used. The full meta-analyses was performed using Hunter's Vgbare program. Most studies used Byrne's two-item

measure to assess interpersonal attraction. However, the reliability of these two items vary. Reported reliabilities are as low as .75 (Sunnafrank, 1986) and as high as .90 (Sunnafrank, 1985). The most commonly reported alpha is .85 (Byrne, 1965). Given that the mean between the highest and lowest report of alpha for these items (82.5) is extremely close to the reliability presented by Byrne, then .85 was used as the reliability estimate for Byrne's two item interpersonal attraction measure. Several studies used only Byrne's liking question to measure interpersonal attraction. For these studies, Spearmann-Brown's prophecy formula for estimating the reliability of shortened scales from a scale with a known reliability was employed. Using Spearmann-Brown's prophecy formula, a reliability of .74 was calculated as the reliability for only the liking item.

The reported reliabilities for studies not using Byrne's two item interpersonal attraction measure were employed to correct their effect sizes for attenuation due to error of measurement. In cases where no reliability measure was presented and there was insufficient information to calculate an estimate of the reliability measure, then perfect measurement was assumed. Only two of the 92 effect sizes used in this study required the assumption of perfect measurement.

# RESULTS

## Attitude Similarity Effect Size

To estimate the effect of attitude similarity on interpersonal attraction across all of the effect sizes used in this meta analysis (k=92), the correlations computed for each of the individual studies were averaged.

The overall uncorrected and weighted effect size for the relationship between attitude similarity and interpersonal attraction is r=.46 (k=91, sd=.19, n=10,588). When corrected for attenuation due to error of measurement, the weighted effect size is .51 (k=91, sd=.22, n=10,588). Because corrected correlations have larger standard errors than corrected ones, a .95 confidence interval was calculated around the uncorrected effect size and each end was subsequently corrected for error of measurement. For these data, the estimated confidence interval for the corrected correlation is $P(.46 \leq \text{MeanRho} \leq .56) = .95$ (See Table 1; for a compilation of all meta-analysis findings, see Appendix B).

Table 1. Meta-analysis findings for all effect sizes used

| K | N | Rho | SdRho |
|---|---|---|---|
| 92 | 10,588 | .51 | .20 |

As a final method of obtaining a general understanding of the effect that attitude similarity has on interpersonal attraction, the interpersonal attraction mean scores were calculated across non-interacting and interacting conditions (see Table 2).

Table 2. Interpersonal attraction means across studies

| | | Mean | SD | K |
|---|---|---|---|---|
| No interaction | AS | 10.61 | .89 | 51 |
| | AD | 7.17 | 1.09 | 51 |
| 5 minute Interaction | AS | 11.07 | .27 | 4 |
| | AD | 11.21 | .09 | 4 |
| 30 minute Interaction | AS | 11.67 | -- | 1 |
| | AD | 10.60 | -- | 1 |
| Interaction conditions combined | AS | 11.39 | .28 | 5 |
| | AD | 11.00 | .24 | 5 |

AS=attitude similar condition
AD=attitude dissimilar condition

Attitude Similarity Percentage of Agreement and Effect Size

Hypothesis one predicted a positive relationship between percentage of agreement and the study effect sizes. To test the effect that manipulation strength has on the corrected effect sizes of the studies used here, two analyses were conducted. The first analysis was a correlation of the uncorrected effect sizes with the percentage difference between the largest attitude similarity condition less the smallest attitude similarity condition. For example, for a study using 12 attitude items and defining attitude

similarity as having nine of 12 items similar and attitude dissimilarity as having three of 12 items, the percentage of agreement was calculated. In this particular case, the percentage of attitude similarity was calculated as .75 (9 divided by 12) and attitude dissimilarity was calculated as .25 (3 divided by 12). As such, the percentage of difference in this example is .50 (.75 less .25).

A second analysis testing manipulation strength was conducted by calculating the variance between attitude conditions across studies and correlating that variance with effect sizes. For example, for a study using 12 attitude items and defining attitude similarity as having nine of 12 items similar and attitude dissimilarity as having three of 12 items, the variance of these conditions was calculated. In this particular case, the percentage of attitude similarity was calculated as .75 (9 divided by 12) and attitude dissimilarity was calculated as .25 (3 divided by 12). Each of the attitude similarity values (.75, .25) were subtracted from the mean of the variances (.50), squared, summed, and divided by the number of conditions. As such, the variance of these conditions is .06.

Because the results from these two tests resulted in approximately the same finding, only the percentage test is presented. The percentage test was chosen because it is a method that is more easily understood.

For these data, the correlation between percentage of agreement and attitude similarity across studies and the uncorrected effect sizes is .48 and .53 when corrected for error of measurement (k=65, n=7,282, see Table 3).

Table 3. Meta findings of percentage of agreement

| Percentage of Agreement | K | N | Rho | SdRho |
|---|---|---|---|---|
| Top Third | 20 | 2,796 | .61 | .13 |
| Middle Third | 24 | 2,070 | .53 | .15 |
| Bottom Third | 21 | 2,416 | .45 | .11 |

There were slightly fewer studies used for the analyses here than all of the studies used in this meta analysis (k=92), because (a) data from interaction studies (k=11) were not used in this analysis and (b) some of the studies did not report data needed to calculate strength (k=16). Interaction studies were analyzed separately, because if interaction attenuates the relationship between attitude similarity and interpersonal attraction, then their lower effect sizes would blur the test of the relationship between manipulation strength and its effect size, because it is believed that the effect size in these studies will be zero. Given the above findings, the percentage of agreement of attitude items had the expected effect on the correlation between attitude similarity and interpersonal attraction.

Number of Attitude Items and Effect Size

Hypothesis two stated that there would be a positive relationship between the number of items employed in the attitude manipulation and the effect size across studies. For these data, the correlation between number of attitude items used in a study and effect size was .05 (k=76, See table 2).

There were slightly fewer studies used for the analyses here than all of the studies used in this meta analysis (k=92), because (a) data from interaction studies (k=11) were not used in this analysis and (b) some of the studies did not report the number of attitude items used (k=5). A plot of attitude items with the corrected effect sizes was conducted to determine if there is a nonlinear relationship between the number of attitude items and effect sizes of studies (see Appendix C). The plot of attitude items with the corrected effect sizes showed no signs of a non-linear relationship. Given the above findings, the number of attitude items did not have the expected effect on the correlation between attitude similarity and interpersonal attraction.

Initial Interaction as a Moderating Variable

The full meta-analysis of all effect sizes used in this study had a large standard deviation and less than 10 percent of the variance across these studies could be attributed to sampling error. Consequently, there is evidence that there is at least one moderating variable in these data.

Hypothesis $3_a$ stated that interaction moderates the effect of attitude similarity on interpersonal attraction, such that the effect size would be lower in interaction studies than studies having no interaction. Because all of the studies (k=92) used in this meta analysis could be coded with respect to interaction, none of them were excluded to test hypothesis three. To test hypothesis $3_a$, a subgroup analysis was performed.

The subgroup analysis testing hypothesis $3_a$ was a comparison of the corrected and weighted effect sizes for studies in which interaction was present or absent. For these

data, the subgroup analysis for the no interaction studies yielded r=.58 (k=81, n=8,572). In comparison, the interaction studies yielded r=.18 (k=11, n=2,016, see Table 4).

Table 4. Meta findings of interaction absent or present

| | K | N | Rho | SdRho |
|---|---|---|---|---|
| No-interaction | 81 | 8,572 | .58 | .16 |
| Interaction Present | 11 | 2,016 | .18 | .08 |

Hypothesis $3_b$ stated that the effect of attitude similarity on interpersonal attraction would increases in the course of an initial interpersonal interaction. To test hypothesis $3_b$, a subgroup analysis breaking the interaction conditions into either initial interaction only (5-minutes) or beyond initial interaction (approximately 30 minutes) was calculated. For these data, the average effect size for initial interaction studies is r=.04 (k=5, n=362) and r=.21 (k=6, n=1,654, see Table 5) for beyond initial interaction studies.

Table 5. Meta findings of varying interaction levels

| | K | N | Rho | SdRho |
|---|---|---|---|---|
| 5-minute Interaction | 5 | 362 | .04 | .07 |
| 30-minute Interaction | 6 | 1,654 | .21 | .09 |
| No-interaction | 81 | 8,572 | .58 | .16 |

A final test to examine the effect that interaction has on the effect size of attitude similarity/interpersonal attraction studies was conducted by coding no interaction, initial interaction only, and beyond initial interaction studies with the values of 1 (k=81, n=8,572), 2 (k=6, n=1,654), and 3 (k=5, n=362) , respectively. The correlation of the new study groupings (1, 2, or 3) with the effect size is r=-.69 and r=-.73 when corrected for error of measurement. Given the above findings, the data show that initial interactions that are 30 or fewer minutes lessen the effect that attitude similarity has on interpersonal attraction and that as time elapses, at least from five to 30 minutes, the effect of attitude similarity on interpersonal attraction increases.

Multiple Regression of Interpersonal Attraction Predictors

In this meta-analysis, the effect of manipulation strength, number of attitude items used, and interaction on interpersonal attraction were studied. To understand the cumulative effect of percentage of agreement, number of attitude items, and presence or absence of interaction on the effect size of studies, a regression analysis was performed on the unweighted and corrected effect sizes of studies. For these data, Multiple R=.69 with beta=.25 (p=<.001) for percentage of agreement of the attitude similarity manipulation, beta=.07 (p=.43) for the number of attitude items, and beta=-.70 (p=<.001) for interaction.

A separate regression analysis was performed with the coding of interaction studies in the three levels previously established. For this analysis, Multiple R=.70 with beta=.25 (p=<.001) for percentage of agreement of the attitude similarity manipulation,

beta=.04 (p=.68) for the number of attitude items, and beta=-.73 (p=<.001) for interaction.

The regression analyses performed here yields interesting findings. In particular, while the correlation between manipulation strength and the effect size of interpersonal attraction is r=.53 in the analysis without interaction studies, the effect drops to beta=.25 in the regression analysis. One reason that the effect of manipulation strength drops in this analysis is that the interaction studies that were excluded in testing hypothesis one were included here. As an additional test, the effect that manipulation strength has on effect sizes across interaction studies was conducted. While r=.53 between manipulation strength and the corrected effect size for the no interaction studies, r=-.36 (k=7, n=539) for the same relationship with interaction studies. The confidence interval for the correlation between manipulation strength and effect sizes for the interaction studies is, $P=(-1.0<r_{me}<.34)=.95$.

Although there were 11 interaction studies that could be used for this analysis, some of the studies (k=4) were not included, because there was insufficient information to determine the manipulation strength of these studies. The extremely small number of cases available to perform this test should lend caution to interpretation of this finding.

## DISCUSSION

Overall Similarity Effect Size. The average corrected effect studies (r=.51) for all studies employed here showed a strong positive relationship between attitude similarity and interpersonal attraction. Given that the correlation between the uncorrected and corrected correlation was large (r=.99), there was no evidence that error of measurement

was a factor in differences across studies. One obvious reason that a large positive relationship between the uncorrected and corrected correlation was found can be attributed to the virtual consistent use of Byrne's two-item interpersonal attraction measure as the dependent variable of interpersonal attraction.

The high positive correlation between manipulation strength and effect size in the no interaction studies provides support for Byrne's reinforcement affect model previously discussed. However, given the limited number of interaction studies (k=7) that could be used to test this idea, insufficient evidence exists to make claims about Byrne's reinforcement affect model when people interact, because there was little variance in the manipulation strength across interaction studies (five of the seven studies had the same variance).

Percentage of Agreement. Given the high correlation between the strength of the attitude manipulation and effect sizes across studies r=.53 (when corrected for error of measurement), there is strong evidence to suggest that perceived percentage agreement of items has a strong influence on interpersonal attraction.

Two reasons were presented to suggest that a positive relationship would be found between percentage of agreement and interpersonal attraction. The first reason stated that as attitude similarity increased, so would positive affective responses toward people holding similar attitudes, which would lead to greater interpersonal attraction. While no direct test could be made to determine if attitudinally similar others had greater affective responses to others in comparison to attitudinally dissimilar others, the effect of greater

interpersonal attraction was found. Consequently, while this model was not entirely affirmed, present evidence is insufficient to discount it as an explanation.

The second reason that was provided to support the relationship between percentage of agreement and greater interpersonal attraction stated that as range restriction decreased across attitude similar conditions, there would be a greater effect on interpersonal attraction. Given the high correlation uncovered between the percentage of agreement and interpersonal attraction, support is provided for this explanation.

Attitude Items and Effect Size. The correlation between the number of attitude items used in each study and the effect size r=.05 was minimal. The evidence suggests that the two variables are not related in a positive linear manner as hypothesized.

Two reasons were provided to support the idea that the number of attitude items used in a study would influence the interpersonal attraction effect sizes across studies. The first indicated that people weight the importance of issues differentially. Consequently, the greater the number of attitude items that are used in a study, the more likely that an important one would be found causing a more extreme judgment on interpersonal attraction. The findings did not support the proposed relationship.

The second reason was a simple methodological explanation stating that as the number of attitude items increased, so would the reliability of this variable. Assuming that a relationship exists between attitude similarity and interpersonal attraction, the greater the reliability of either of the variables would by definition result in a larger correlation between the two variables. No evidence was found to support this rationale.

Given the low correlation between the number of attitude items and interpersonal attraction effect sizes across studies one of two conclusions can be drawn. First, the above rationales used to predict a positive linear effect between the use of a greater number of attitude items and stronger judgments of interpersonal attraction could be flawed. That is, the idea of issue importance and the reliability phenomenon are incorrect in this context.

A second conclusion that can be drawn is that factors within this meta-analysis prevented an accurate test of the relationship between the number of attitude items and effect sizes across studies. In particular, the limited variance in number of attitude items across studies could have prevented an accurate test of this relationship. Given strong support that there was a weak test of the relationship between the number of attitude items and interpersonal attraction effect sizes in the studies used for this meta-analysis, any conclusions drawn from these findings should be taken with caution.

Interaction as a Moderator. Two tests were employed to examine the effect that interaction has on the relationship between attitude similarity and interpersonal attraction. Not only did the sub-group analysis of interaction present or absent in studies reveal extreme differences in average effect sizes (r=.18 and r=.58), but the correlation of varied interaction levels with the effect size also showed evidence that interaction effects the relationship between attitude similarity and interpersonal attraction (r=.04, r=.21, r=.58). Since a majority of the studies were done without any interaction, there was a substantial difference in the number of studies used for the comparison. However, given the extreme differences in average effect sizes across studies, it seems reasonable to conclude that

interaction, at least in the early stages of relationships, lessens the effect that attitude similarity has on interpersonal attraction.

Two ideas were tested with this hypothesis. The first is that when subjects are presented with face to face interaction, other variables, such as interaction norms and nonverbal cues eliminate the effect that attitude similarity has on interpersonal attraction. Given that the effect size between attitude similarity and interpersonal attraction is substantially lower in the interacting than the non-interacting condition, evidence appears to support this rationale.

A second idea tested in this hypothesis is that over time, in the interaction condition, the effect size between attitude similarity and interpersonal attraction will increase, because factors which initially suppress the relationship between attitude similarity and interpersonal attraction such as interaction norms and the lack of attitudinal information will be lessened in time. As hypothesized, the effect size between attitude similarity and interpersonal attraction increased over time. Consequently, while communication appears to initially erase the effect of attitude similarity on interpersonal attraction, the positive effect of attitude similarity on interpersonal attraction emerges, at least at time periods greater than 5-minutes.

Limitations to Meta-Analysis

One of the limitations of this dissertation was similarity in the methods employed by researchers to study the effect that attitude similarity has on interpersonal attraction. Although replication of studies is useful in obtaining a more stable estimate of an effect size between variables, the lack of variability limits the overall understanding of the

conditions under which the relationship is influenced. Consequently, although we have a fairly stable estimate of the effect that attitude similarity has on interpersonal attraction in unfamiliar bogus-stranger situations, we are unsure how these variables interact with one another in more familiar relationships.

While some researchers have sought to branch out and explore the relationship between attitude similarity and interpersonal attraction with respect to initial interactions (Capella & Palmer, 1990; Sunnafrank, 1986; Sunnafrank & Miller, 1981), these studies fail to show the long-term effects of interactions. More specifically, the rationale used to explain why initial interactions suppress the attitude similarity to interpersonal attractiveness relationship are based on the structure of initial conversations. The more interesting question would be how does interaction effect long-term relationships? Current research does not provide a sufficient base to answer this question.

A final concern of this meta-analysis is the measure used to assess interpersonal attraction. As suggested previously, most of the studies used Byrne's two-item interpersonal attraction scale to measure the dependent variable of interpersonal attraction. One problem with Byrne's interpersonal attraction measure is that it lacks face validity. Although the liking item seems to measure interpersonal attraction, the second item on working does not seem an appropriate measure of interpersonal attraction. In the work domain, there are many variables which influence a person's desire to work with another. For example, while people value characteristics of expertise (Conrad, 1990), organization (Daniels & Spiker, 1991), and objectivity (Hanna & Wilson, 1988) in working relationships, these same characteristics are not necessarily important

components of general interpersonal attraction. Consequently, Byrne's working item seems a better measure of perceived work competency as opposed to interpersonal attraction.

A second problem with Byrne's two item measure is that it cannot be tested for validity. With only one correlation available (the correlation between the two items) a test of internal consistency is impossible.

Research that has been undertaken to develop a scale to measure interpersonal attraction has been conducted by McCroskey and McCain (1974). Their scale includes the dimensions of social, physical, and task attraction (see Appendix C). If interpersonal attraction is indeed multi-dimensional as proposed by McCroskey and McCain, then there is evidence that a better measure of interpersonal attraction measure should be used in lieu of the Byrne measure.

An additional benefit of the McCroskey and McCain measure is that it has enough items to test the measure for internal consistency and parallelism since they provide at least five measures for each dimension. Unfortunately, McCroskey and McCain do not address the issue of internal consistency or parallelism in their interpersonal scale paper.

Future Research

While the effect that attitude similarity has on interpersonal attraction has been examined in over 100 studies, we have advanced little in our understanding of these variables except that in bogus stranger situations attitude similarity has a strong effect on interpersonal attractiveness and that initial interactions moderate the effect of attitude

similarity. Clearly, a research program is needed to enhance our understanding in this domain.

One area of research that has generated considerable controversy in the attitude similarity concerns the effect of initial interactions. Within this dissertation, it is suggested that people are operating within particular rules and norms in initial interactions. Future research should test whether initial interaction norms operate to suppress the effect of attitude similarity on interpersonal attraction in newly formed relationships.

To test the above idea, subjects could be presented with attitudinally similar or dissimilar partners and asked to engage in initial conversations in which they either engage in initial interactions that are typical of first time interactants or engage in a discussion of specific attitude items.

In addition to testing types of conversations, research should also be conducted on interactions over longer time periods than have previously been used. In particular, the research on initial interactions have had subjects engage in conversations between five minutes (Sunnafrank, 1985) and 30 minutes (Curran and Lippold, 1975). Although this research has been useful in understanding the effect of initial interactions in the short term, it does little to help us understand how attitude similarity influences interpersonal attraction in relationships that are more enduring.

An interesting finding in this meta-analysis is that as the time of interaction increases, so did the effect that attitude similarity has on interpersonal attraction. Although these findings are limited to comparing the 5-minute interaction ($r=.04$) with

the 30-minute interaction (r=.21) conditions, they do add interesting insight into the attitude similarity effect. In particular, it may suggest that the effect of attitude similarity on interpersonal attraction in developing relationships.

To obtain a more complete understanding of the effect that attitude similarity exerts on interpersonal attraction over time, research needs to examine interaction relationships greater than the 30 minute maximum that has been used. This research would determine if the attitude similarity effect on interpersonal attraction remained stable after a certain period of time or if it fluctuated.

A second area of interest in the attitude similarity debate that has received considerable recognition involves an alternative explanation of the traditional attitude similarity effect on interpersonal attractiveness. As stated earlier, Rosenbaum 's (1986) repulsion hypothesis maintains that attitude similarity does not increase interpersonal attraction, but that attitude dissimilarity decreases interpersonal attraction. If people are repulsed by people who are attitudinally dissimilar, then it would provide a completely different perspective on the effect that attitude similarity has on interpersonal attraction. To test the repulsion hypothesis, Rosenbaum replicated the traditional attitude similarity study (which includes only attitudinally similar and dissimilar conditions) and added a no information control condition.

In his research, Rosenbaum apportioned subjects into attitude similar, dissimilar, or no attitude information conditions. His research revealed that there were no significant mean differences between the attitude similar and no attitude conditions with respect to the interpersonal attractiveness of a bogus stranger. Additionally, the results showed that

the attitude dissimilar others were rated a significantly less interpersonally attractive than both the attitude similar and no attitude information conditions.

Although Rosenbaum's findings were consistent with his predictions, some researchers (Byrne, 1992) argue that it is impossible to have a no information control condition. That is, it has been argued that in the absence of attitudinal information about others, people assume that the anonymous person shares similar attitudes to them.

How might one go about forming a true no information control group? The first step would be to create individuals that subjects believe that they cannot make inferences about their attitudes. For example, a researcher might provide subjects with a description of another in which limited information is provided, e.g., only name and non-descriptive background information. In this case, the lack of information about another could potentially heighten the realization that there is insufficient information to make attitudinal predictions. Once a no inference condition is established, further testing of the repulsion hypothesis can be undertaken.

Even in the absence of a no inference condition, the repulsion hypothesis could be tested. If the repulsion hypothesis is true, then repulsion should be positively correlated with the amount of time of initial interactions, because people reveal more attitudinal information that would be perceived as repulsive to others.

Evidence to test the repulsion hypothesis given the findings of this meta-analysis is available through an analysis of the mean scores for interpersonal attraction over time (see Table 2). If attitude dissimilarity leads to interpersonal repulsion, then the mean attraction scores in the attitude dissimilar condition should decrease between the 5-minute

and 30-minute conditions, because greater number of dissimilar attitudes should be uncovered. While there is some evidence supporting the idea that attitudinally dissimilar others are perceived as less attractive over time ($M_{ad}$ at 5-minutes = 11.21, k=4 and $M_{ad}$ at 30-minutes = 10.60, k=1), the limited number of studies that are available to compare these conditions do not provide enough cases to sufficiently test the repulsion hypothesis using the interpersonal attraction means.

A third area of research that should be conducted is testing the theories to explain why some variables, such as interaction, influence the relationship between attitude similarity and interpersonal attraction. For example, Sunnafrank consistently argues across several articles that initial interaction moderates the relationship between attitude similarity and interpersonal attraction because without interaction people feel that their goals of achieving predictable, controllable, and stable environments are difficult to achieve. Consequently, in non-interaction research, subjects rate attitude dissimilars as interpersonally unattractive since they perceive them as a threat to their interaction goals while attitude similars are rated as interpersonally attractive, because they are perceived as interaction goal facilitators. However, once people interact, Sunnafrank argues that people realize that they can achieve the above interpersonal goals and, consequently, the effect of attitude similarity is eliminated.

To test Sunnafrank's theoretical explanation provided above, subjects could be given a copy of attitude items from another individual that are either consonant or disconsonant from their own attitudes. At this point, subjects could be asked to complete

a host of measures designed to measure the extent to which they feel a future interaction with this stranger will be predictable, controllable, and stable.

Upon completion of the initial interpersonal measures, subjects could be asked to interact with the person they received information about their attitude items. If the theory presented by Sunnafrank is correct, results should show that attitude similarity prior to interaction should be positively related to the belief that a future interaction with the stranger will be unpredictable, uncontrollable, and unstable. After a discussion, the effect of attitude similarity on the above three variables should be eliminated if Sunnafrank's reasoning for differences in interaction versus no interaction conditions is correct.

A final area of research that has received some notice, but little attention by researchers, involves testing the effect that interpersonal attraction has on attitude similarity. Although some research has examined this relationship, it has been conducted with small sample sizes and with static data.

One method that could be employed to examine the effect that interpersonal attraction has on attitude similarity is to examine whether attitudes of relational partners converge over time. In particular, assuming that people who date are interpersonally attracted to one another, measures on attitude items could be collected at varying times in new forming relationships and trends could be examined to see if attitude convergence occurs over time.

Although convergence of attitudes over time might be confounded with other variables, such as power, self-esteem, and importance of being in a particular

relationship, these variables could be controlled for and examined as variables that might influence attitudinal convergence.

## CONCLUSIONS

As early as the fourth century B.C., Aristotle suggested that friends regard the same things as good and evil (1932). Taken literally, Aristotle would agree with Byrne's notion that attitude similarity influences interpersonal attraction or conversely, that close relationships induce similar attitudes.

While thousands of years have passed since Aristotle's revelation, researchers are still questioning the conditions under which the above statement is true. While this dissertation provides one step toward sorting out what we know about the relationship between attitude similarity and interpersonal attraction there remain many unanswered questions.

Communication scholars interested in interpersonal communication should find this dissertation especially interesting. In particular, it reveals that communication, especially in initial interactions plays an important role in assessments of interpersonal attraction.

A second reason that interpersonal communication scholars should find interest in this dissertation is with the respect to the theoretical explanations that have been provided to describe the effect that interpersonal interaction has on the relationship between attitude similarity and interpersonal attraction. In particular, this dissertation provides new explanations, such as politeness theory, and nonverbal cues displayed in interpersonal interactions to explain why people make certain interpersonal attraction

judgments. While this dissertation does not necessarily provide a definitive explanation of the interpersonal interaction effect on the relationship between attitude similarity and interpersonal attraction, it at least provides more reasons to explain current findings.

In addition to providing new theoretical explanations to understand human behavior, this dissertation has also taken the abstract significance tests applied by individual studies and converted them into effect sizes. Consequently, future scholars can discuss the effect that attitude similarity has on interpersonal attraction with a better understanding of the level of effect as opposed to the vague notion that an effect exists.

While a better understanding of how attitudes are revealed and discovered within relationships need to be examined, this dissertation provides a working framework to conduct future research that is theoretically supported.

# APPENDICES

APPENDIX A: Studies used for Meta-Analysis

| Author | D | AI | N | I | r | r' |
|---|---|---|---|---|---|---|
| Arenson, Davis, & Jones (1983) | - | - | 36 | N | .46 | .50 |
| Arrowood & Short (1973) | - | 12 | 240 | N | .41 | .45 |
| Bleda (1973) | .60 | 10 | 90 | N | .40 | .43 |
| Bond, Byrne, & Diamond (1968) | .60 | 10 | 80 | N | .49 | .53 |
| Brink (1977) | .42 | 07 | 72 | N | .38 | .41 |
| Byrne (1961) | - | 26 | 34 | N | .88 | .96 |
| Byrne (1961) | - | 26 | 84 | N | .66 | .72 |
| Byrne (1962) | - | 12 | 112 | N | .64 | .70 |
| Byrne, Baskett, & Hodges 1 (1971) | .84 | 24 | 40 | N | .85 | .92 |
| Byrne, Baskett, & Hodges 2 (1971) | .66 | 12 | 56 | N | .76 | .83 |
| Byrne & Clore (1967) exp 1 | .66 | 12 | 80 | N | .58 | .63 |
| Byrne & Clore (1967) exp 2 | - | 12 | 70 | N | .57 | .62 |
| Byrne, Clore, & Grifitt (1967) | .66 | 56 | 31 | N | .68 | .74 |
| Byrne & Ervin (1969) | .60 | 40 | 176 | N | .34 | .37 |
| Byrne, Ervin, & Lamberth (1970) | .34 | 10 | 49 | N | .28 | .30 |
| Byrne, Gouaux, Griffitt, Lamberth,Murakawa, Prasad, Prasad, & Ramirez (1971) | .37 | 15 | 506 | N | .26 | .28 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Byrne, Griffitt, Hudgins, & Reeves 1 (1969) | 1.0 | 08 | 84 | N | .60 | .65 |
| Byrne, Griffitt, Hudgins, & Reeves 2 (1969) | .49 | 12 | 82 | N | .34 | .37 |
| Byrne & Griffitt (1966) | .50 | 12 | 260 | N | .21 | .23 |
| Byrne & Griffitt (1966) | - | 07 | 30 | N | .57 | .62 |
| Byrne, Griffitt, & Golightly 1 (1966) | .66 | 12 | 85 | N | .44 | .48 |
| Byrne, Griffitt, & Golightly 2 (1966) | .66 | 12 | 55 | N | .63 | .68 |
| Byrne, London, & Griffitt (1968) | .50 | 14 | 80 | N | .53 | .58 |
| Byrne, London, & Reeves (1968) | .66 | 12 | 205 | N | .50 | .54 |
| Byrne & Nelson (1965) | .67 | - | 168 | N | .56 | .61 |
| Byrne & Rhamey (1965) | 1.0 | 12 | 180 | N | .65 | .71 |
| Cappella & Palmer (1990) | - | 36 | 80 | Y | .39 | .43 |
| Cherry, Byrne, & Mitchell (1976) | .50 | 12 | 192 | N | .61 | .66 |
| Clore & Baldridge (1970) | 1.0 | 12 | 64 | N | .50 | .54 |
| Clore & Gormly (1974) | .50 | 12 | 48 | N | .42 | .46 |
| Condon & Crano (1988) | 1.0 | 12 | 226 | N | .54 | .59 |
| Curran & Lippold 1 (1975) | - | 30 | 588 | Y | .15 | .16 |
| Curran & Lippold 2 (1975) | - | 30 | 196 | Y | .01 | .01 |
| Davis (1984) | 1.0 | 15 | 60 | N | .88 | .96 |
| DeWolfe & Jackson (1984) | - | - | 70 | N | .50 | .68 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Erwin (1981) | - | 12 | 50 | N | .34 | .37 |
| Erwin (1982) | .50 | 12 | 48 | N | .38 | .41 |
| Franklin (1971) | .85 | 07 | 120 | N | .58 | .63 |
| Gonzales, Davis, Loney, Lukens, & Junghans (1983) | 1.0 | 20 | 270 | N | .73 | .79 |
| Good & Good (1972) | .66 | 12 | 165 | N | .56 | .61 |
| Good & Nelson (1971) | .50 | 12 | 142 | N | .41 | .45 |
| Gormly & Clore (1969) | .60 | 10 | 96 | N | .59 | .64 |
| Gouaux (1971) | .60 | 20 | 110 | N | .68 | .74 |
| Gouaux & Summers (1973) | 1.0 | 12 | 228 | N | .41 | .45 |
| Hoyle (1993) | .50 | 12 | 82 | N | .75 | .82 |
| Insko & Wetzel (1974) | .67 | - | 128 | N | .61 | .66 |
| Jackson & Mascara (1971) | .60 | 10 | 108 | N | .52 | .57 |
| Jamieson, Lydon, & Zanna (1987) | - | 10 | 48 | N | .79 | .86 |
| Johnson (1974) | .61 | 18 | 80 | N | .21 | .28 |
| Johnson & Johnson (1972) | .50 | 12 | 32 | N | .64 | .86 |
| Kaplan (1972) | .50 | 12 | 80 | N | .67 | .73 |
| Kaplan & Olczak (1970) | 1.0 | 12 | 135 | Y | .28 | .30 |
| Kleck & Rubenstein (1975) | .69 | 15 | 41 | Y | .20 | .22 |
| Layton & Insko (1974) | 1.0 | 08 | 320 | N | .48 | .52 |
| Lydon, Jamieson, & Zanna (1988) | - | 10 | 81 | N | .41 | .55 |
| McGinley (1980) | .80 | 20 | 183 | N | .45 | .49 |

| | | | | | | |
|---|---|---|---|---|---|---|
| McGinley, Nicholas, & McGinley (1978) | .80 | 20 | 165 | N | .50 | .54 |
| McGinley & Reiner (1979) | .80 | 10 | 190 | N | .57 | .62 |
| Olczak & Goldman (1975) | .60 | 15 | 40 | N | .60 | .65 |
| Orpen (1984) | - | 18 | 614 | Y | .27 | .29 |
| Palmer & Kalin (1985) | .72 | 07 | 271 | N | .48 | .52 |
| Pandey & Rastogi (1978) | .50 | 09 | 32 | N | .70 | .76 |
| Posavac & Pasko (1971) | 1.0 | 08 | 81 | N | .68 | .74 |
| Rosenbaum (1986) | .66 | 12 | 168 | N | .54 | .59 |
| Sachs (1975) exp 1 | 1.0 | 12 | 60 | N | .30 | .33 |
| Sachs (1975) exp 2 | 1.0 | 12 | 90 | N | .43 | .47 |
| Santee (1976) | .70 | 20 | 112 | N | .64 | .70 |
| Scott (1973) | 1.0 | 12 | 73 | N | .84 | .91 |
| Shaikh & Kanekar (1993) | 1.0 | 15 | 76 | N | .90 | 1.21 |
| Shuntich (1976) | .60 | 10 | 54 | N | .64 | .70 |
| Singh (1973) | .60 | 10 | 75 | N | .68 | .74 |
| Singh (1974) | .60 | 10 | 90 | N | .64 | .70 |
| Singh (1975) | 1.0 | 03 | 30 | N | .68 | .74 |
| Smeaton, Byrne, & Murmen (1989) | .88 | - | 59 | N | .38 | .41 |
| Smith, Meadow, & Sisk (1970) | .66 | 12 | 44 | N | .53 | .58 |
| Stroebe, Insko, Thompson, & Layton (1971) | 1.0 | 08 | 180 | N | .76 | .83 |
| Sunnafrank (1983) | 1.0 | 02 | 53 | N | .65 | .71 |

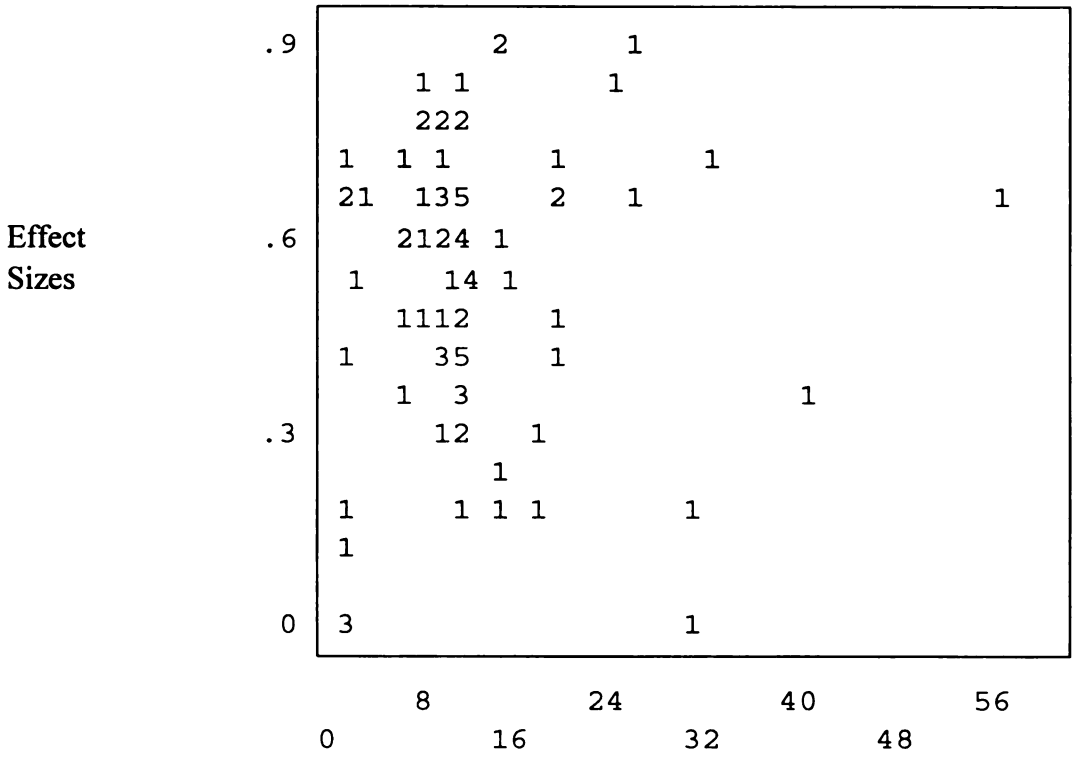
| | | | | | | |
|---|---|---|---|---|---|---|
| Sunnafrank (1983) | 1.0 | 02 | 98 | Y | .00 | .00 |
| Sunnafrank (1984) | 1.0 | 02 | 67 | N | .64 | .71 |
| Sunnafrank (1984) | 1.0 | 02 | 98 | Y | .00 | .00 |
| Sunnafrank (1985) | 1.0 | 02 | 64 | N | .45 | .49 |
| Sunnafrank (1985) | 1.0 | 02 | 60 | Y | .00 | .00 |
| Sunnafrank 1 (1986) | 1.0 | 02 | 52 | N | .74 | .80 |
| Sunnafrank 2 (1986) | 1.0 | 02 | 50 | Y | .18 | .20 |
| Sunnafrank & Miller (1981) | 1.0 | 02 | 58 | N | .73 | .79 |
| Sunnafrank & Miller (1981) | 1.0 | 02 | 56 | Y | .11 | .12 |
| Tesch, Huston, & Indenbaum (1973) | 1.0 | 32 | 100 | N | .73 | .79 |
| Tesser (1971) | .33 | 06 | 22 | N | .72 | .78 |
| Touhey (1974) | .84 | 12 | 90 | N | .62 | .67 |
| Williams, Ryckman, Gold, & Lenney (1982) | .60 | 10 | 80 | N | .78 | .85 |
| Yabrudi & Diab (1978) exp 1 | - | 08 | 40 | N | .75 | .82 |
| Yabrudi & Diab (1978) exp 2 | - | 08 | 40 | N | .83 | .90 |

I = Initial interaction
AI = Number of attitude items
D = Percentage difference between most similar and dissimilar attitude conditions
N = Sample size
r = Uncorrected correlation
r' = Corrected correlation

APPENDIX B: Overall Effect Size and Subgroup Analysis

| | K | N | Rho | SdRho |
|---|---|---|---|---|
| Overall Meta-analysis | 92 | 10,588 | .51 | .20 |
| No-interaction | 81 | 8,572 | .58 | .16 |
| Interaction Present | 11 | 2,016 | .18 | .08 |
| 5-minute Interaction | 5 | 362 | .04 | .07 |
| 30-minute Interaction | 6 | 1,654 | .21 | .09 |
| Percentage of Agreement | | | | |
| Top Third | 20 | 2,796 | .61 | .13 |
| Middle Third | 24 | 2,070 | .53 | .15 |
| Bottom Third | 21 | 2,416 | .45 | .11 |

APPENDIX C: Plot of Number of Attitude Items with Effect Sizes




Appendix C. Plot of the number of attitude items employed in individual studies with their reported effect size between attitude similarity and interpersonal attraction.

APPENDIX D: McCroskey & McCain Attraction Measure

Social Attraction

1. I think he (she) could be a friend of mine.
2. It would be difficult to meet and talk with him (her). *
3. He (she) just wouldn't fit into my circle of friends. *
4. We could never establish a personal friendship with each other. *
5. I would like to have a friendly chat with him (her).

Physical Attraction

1. I think he (she) is quite handsome (pretty).
2. He (she) is very sexy looking.
3. I find him (her) very attractive physically.
4. I don't like the way he (she) looks. *
5. He (she) is somewhat ugly. *
6. He (she) is not very good looking. *
7. He (she) wears neat clothes.
8. The clothes he (she) wears are not becoming. *

Task Attraction

1. He (she) is a typical goof-off when assigned a job to do. *
2. I have confidence in his (her) ability to get the job done.
3. If I wanted to get things doe I could probably depend on him (her).
4. I couldn't get anything accomplished with him (her). *
5. He (she) would be a poor problem solver. *

* reflected items

# LIST OF REFERENCES

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* Indicates that study was used in the meta-analysis.


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