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Uncertainty Reduction Theory

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Uncertainty Reduction Theory

Communication Context

Originally: Interaction with strangers; Subsequently: interpersonal relationships

Questions It Addresses in Our Every Day Lives:

1. Why do we feel anxious when we're interacting with strangers or in new situations?

2. How can we manage the uncertainties we experience when our friends act in unexpected ways?

3. What kinds of things cause us to feel uncertainty when dealing with other people?

Theory at a Glance

● Various conditions lead us to experience uncertainty when interacting with other people.

● We seek to reduce uncertainty to enhance our abilities to predict and explain the people with whom we interact.

● By collecting information about our self, our relationships, and other people, we reduce uncertainty (increase predictability)

Visualization of Uncertainty Reduction Theory

| Uncertainty | → | Information Seeking | → | Uncertainty Reduction |

The acquisition, processing, retention, and retrieval of information is vital to the growth, maintenance, and decline of personal and social relationships. Relationships can be viewed as systems of information exchange that must reduce uncertainty in order to survive (p.255). Charles R. Berger (1988).

Have you ever taken a class where the instructor provided little information about the course or basis for grades? Were you ever   invited by a friend to a social gathering where you didn't know anyone aside from the friend who invited you? How did you feel in those situations? The lack of clear criteria for a course grade creates uncertainty—you don't know what is expected of you. Not knowing anyone else at the social event means you don't know what to expect from the other people or how they'll react to you. In both situations, you are unable to predict what will happen, and this limits your ability to plan and adapt. Your uneasiness might prompt you to ask your instructor or friend for more information and as you learn more, your uncertainty and anxiety decrease. These two situations reflect the underlying focus of uncertainty reduction theory.

Uncertainty reduction theory (URT) was originally created to explain the communication process that occurs when two strangers interact. Charles Berger and Richard Calabrese (1975) observed that when we interact with strangers, we experience uncertainty because we don't really know what to expect. Berger and Calabrese claim that as the interaction proceeds we gain information that quickly reduces our uncertainties. However, there have probably been times where you didn't really worry about finding out anything about the stranger because you never expected to see the person again or it wasn't someone with whom you wanted to pursue a relationship. URT provides explanations for these and other behaviors when people interact with someone new. However, the general principles underlying URT apply to most, if not all, human communication (Berger, 1986).

Over the years, uncertainty reduction theory has evolved to include interactions within established interpersonal relationships that may also experience stressful periods of uncertainty. For example, you might be unsure of your partner's feelings for you, or be unsure of where a

relationship is headed. Or, you might be confused about your own feelings for the partner. To reduce such uncertainties, we seek information. Have you ever had someone end a friendship or romance with you without really telling you why? If so, you were probably frustrated and even angry over not knowing what happened—by the uncertainty. Rather than being faced with such uncertainty, we actually prefer being told the reasons why someone is ending a relationship, even when those reasons might hurt (Tolhuizen, 1989). Therefore, Berger and his colleague James Bradac (1982) expanded the discussion of uncertainty reduction to include on-going relationships and even relationships that have terminated.

Uncertainty is also aroused in our relationships when someone behaves in an unexpected manner—violates our expectation. For example, your co-worker, who is always very cheerful begins to withdraw and seems depressed. This behavior raises uncertainty because you no longer feel confident in your ability to predict your co-worker's behavior. These observations about uncertainty reduction reflect the essence of the theory. Nevertheless, we will discuss a variety of factors that mediate how we actually manage uncertainty, including factors that lead us to sometimes prefer uncertainty to certainty.

ELEMENTS OF UNCERTAINTY REDUCTION THEORY

In this section, we will discuss what uncertainty reduction is and the various types of uncertainty that are found in interpersonal interactions (Figure 8.1). Many of these concepts are drawn from the broader application of uncertainty to all aspects of interpersonal relationships. However, we also present the basic variables and axioms (self-evident statements that do not need proof) developed in the original application of uncertainty reduction to initial interactions. Finally, we

conclude with some axioms that have been added by other scholars in modifying and expanding the application of the theory.

Figure 8.1: Elements of Uncertainty Found in Interpersonal Interactions
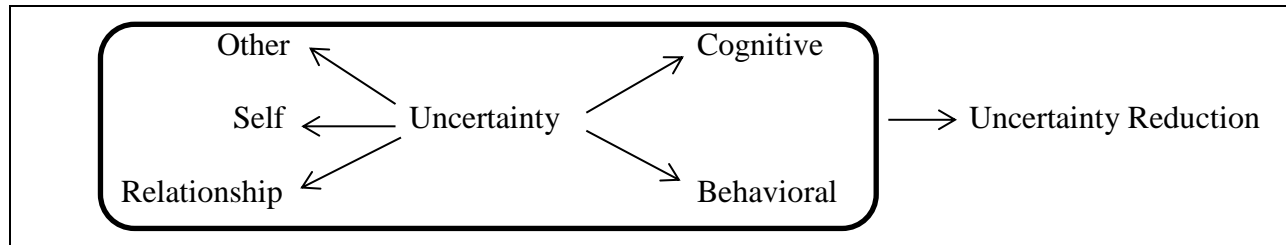
Uncertainty

Berger and Calabrese (1975) define **uncertainty** *as having a number of possible alternative predictions or explanations.* The larger the number of alternatives, the greater the degree of uncertainty that results. As such, uncertainty is presented as a cognitive process in which we consider multiple possibilities in trying to explain or predict something.

Suppose you stop to visit a friend and your friend answers the door in tears. Did you expect or predict your friend to be crying when the door opened? How many possible explanations can you think of for why your friend is crying? If you know your friend just broke up with a girlfriend or boyfriend, then you might not be surprised. Since there is just the one alternative to consider, you had low uncertainty. But if you know your friend is not generally emotional and hasn't been dating anyone, then you may be quite surprised to find your friend in tears—you didn't expect or predict the behavior. Of course, there could be many reasons for your friend's behavior—problems at home, work, school, or with other friends; and thus, you have much higher uncertainty. This example specifically illustrates **partner uncertainty,** *which is our inability to predict the behavior, thoughts, or feelings of a particular person.*

Our uncertainty is not limited, however, just to our partners; we also encounter events where we have uncertainty about how to behave. For example, you've probably felt some degree of uncertainty when visiting a friend's family for the first time, going to another person's religious service, or attending your first college class because you are unsure of how you should behave. This **self uncertainty** *represents a person's insecurity in describing, explaining, or predicting his or her own behaviors, as well as his or her thoughts and feelings*. Self uncertainty is reflected when we say things to ourselves like, "Why did I do that?" "I'm not sure how I'm supposed to act" or "I don't know what my feelings are toward you." Such uncertainty can arise because of a lack of relevant self- knowledge (Berger & Bradac, 1982).

We also might be unsure of what's happening in a relationship. **Relational uncertainty** *is the lack of confidence a person feels in his or her ability to predict or explain issues associated with a given relationship.* In essence, it is the level of certainty about the current or future status of the relationship, or other relational issues. Leanne Knobloch and Kristen Satterlee (2012) define it as "the questions people have about participating in an interpersonal relationship (p. 108)." You've probably had times where a friend or romantic partner fails to return your calls and after a while you wondered if the relationship has changed or if the relationship is over. Knobloch and Denise Solomon (1999) identify four sources of relational uncertainty:

1) what norms apply to a given relationship;

2) the costs and rewards (evaluation of the relationship);

3) the goals (future plans and commitment), and

4) the very definition of the relationship.

Uncertainty in relationships sometimes prompts direct discussion about the nature of the relationship, which is called **relationship talk**. However, contrary to the predictions of

uncertainty reduction theory that people will seek to reduce uncertainty, one study found that when romantic partners feel above normal uncertainty about the relationship, participants view relationship talk as face threatening and thus avoid such talk, which, in turn increases uncertainty (Knobloch & Theiss, 2011). Knobloch and Satterlee (2012) note that when a person has relational uncertainty, the absence of understanding makes it difficult to gain information and can trap a person in a cycle of ambiguity and avoidance. They also note that uncertainty can be helpful (shield from harm and add intrigue) or harmful (impede communication). In addition, research suggests that before relational uncertainty can be reduced, uncertainties associated with the self and the partner need to be managed (Knobloch and Solomon, 1999).

Cognitive Uncertainty and Behavioral Uncertainty

The uncertainties we have about ourselves or other people fall into two general categories: cognitive and behavioral. **Cognitive uncertainty** *is the uncertainty in knowing what another person has thought or is thinking, or uncertainty about our own thoughts*. **Behavioral uncertainty** *is the uncertainty associated with being able to predict or explain a person's behavior, or in knowing what behaviors are expected of us or predicting our own actions*.

8-A   Suppose a new friend was supposed to call you last night but did not. To what degree do you feel you know what thoughts were going through your friend's mind in not calling (cognitive uncertainty about the other)? How well can you predict what your friend will do next (behavioral uncertainty about the other)? How confident are you that you know what you would think and feel about a friend not calling (cognitive uncertainty about self)? How well can you predict how you would react to this situation (behavioral uncertainty about self)? These four

questions reflect the kinds of questions you might have when dealing with uncertainty. The uncertainty might motivate you to seek information. For example, you might text your friend and ask what happened.

Uncertainty Reduction

Texting the new friend to find out why he or she didn't call you last night is an effort to reduce your uncertainty—to understand what happened. **Uncertainty reduction** *is primarily about making sense out of something*. Making sense of something means increasing your ability to accurately predict or explain it, often by reducing the number of alternative explanations—hopefully to one. The process by which you increase your ability to predict or explain is one of the central themes of URT.

The earlier example concerning a roommate demonstrates two ways we apply uncertainty reduction that were identified by Berger and Calabrese: *proactive or predictive*, the ability to generate predictions before an interaction, and *retroactive or explanatory*, the ability to generate explanations during or afterwards. Notice that uncertainty reduction involves the same goals associated with theory building discussed in Chapter 1: prediction and explanation. This is because, uncertainty acts as an impetus for us to generate theories in our communication interactions to predict and explain a partner's thoughts, feelings, and behaviors. Berger and Bradac (1982) list a third type of information that reduces uncertainty, *descriptive*. Descriptive information represents simply the attributes we collect about people—their age, weight, hair color, etc.—that let us identify a given person in a crowd.

Seven Variables of Uncertainty Reduction in Initial Interactions

Seven qualities or variables associated with uncertainty in an initial interaction were identified in the original theory by Berger and Calabrese (1975):

1. *Amount of verbal communication*: Essentially, the number of words that are exchanged during the course of an interaction.

2. *Nonverbal affiliative expressiveness*: A specific form of nonverbal communication in which people display positive feelings toward another person (for example, pleasant facial expressions, head nods, and hand and arm gestures).

3. *Information-seeking behavior*: The number of questions that an individual asks of another.

4. *Intimacy level of communication content*: The degree to which personal information is low risk, such as demographics, versus high risk, such as beliefs, attitudes, and opinions.

5. *Reciprocity*: A relative equal sharing of information back and forth between two people.

6. *Similarity*: Degree to which two people share similar attitudes and engage in communication that reflects agreement.

7. *Liking*: A positive feeling or regard for another person.

These seven qualities serve as the basis for the theory and are combined to create axioms.

Axioms Based on the Seven Variables

Axioms *are statements or propositions of a relationship between variables that are assumed to be true* (Blalock, 1969); for example, "The more two people talk to each other about themselves, the better they will know each other." Because axioms are considered self-evident or obvious, they generally are not tested. In presenting the axioms, the theory builder often cites previous research and theory to support the validity of the axiom. Axioms themselves serve as the foundation for logically deducted theorems, and these theorems are tested. The combination of

axioms and theorems represent the core of the theory. Axioms serve as the basis for logically

deduced theorems through the application of a syllogism, for example:

Axiom X: $A = B$

Axiom Y: $B = C$

Resulting in the theorem: $A = C$

For the theorem to be correct, the two axioms from which it is derived need to be valid.

However, sometimes one or both of the axioms are in error. When this happens, any derived

theorems will also be in error, and therein lays the weakness in this approach to theory building.

In addition, the failure to validate a given theorem puts into question the validity of the two

axioms.

Berger and Calabrese combined the seven variables of uncertainty reduction in initial

interactions to create seven axioms (Table 8.1). The axioms include statements about factors that

lead to feelings of uncertainty, the impact of increased uncertainty on initial interactions, and the

impact of reducing uncertainty in initial interactions.

Table 8.1: Original Axioms from Berger and Calabrese (1975):

Axiom 1. Given the high level of uncertainty present at the onset of the entry phase, as the
amount of verbal communication between strangers increases, the level of uncertainty for
each interactant in the relationship will decrease. As uncertainty is further reduced, the
amount of verbal communication will increase.

Axiom 2. As nonverbal affiliative expressiveness increases, uncertainty levels will decrease in an
initial interaction situation. In addition, decreases in uncertainty level will cause increases
in nonverbal affiliative expressiveness.

Axiom 3. High levels of uncertainty cause increases in information seeking behavior. As

uncertainty levels decline, information seeking behavior decreases.

Axiom 4. High levels of uncertainty in a relationship cause decreases in the intimacy level of

communication content. Low levels of uncertainty produce high levels of intimacy.

Axiom 5. High levels of uncertainty produce high rates of reciprocity. Low levels of uncertainty

produce low reciprocity rates.

Axiom 6. Similarities between persons reduce uncertainty, while dissimilarities produce

increases in uncertainty.

Axiom 7. Increases in uncertainty level produce decreases in liking; decreases in uncertainty

level produce increases in liking.

The logic behind the axioms is quite appealing, but at times it fails to adequately capture

the complexity of human interactions. For example, it seems logical that gaining information

would reduce uncertainty, but under some circumstances gaining information can actually

increase uncertainty. At a party, a person you've just met seems to be showing interest in you,

but you are unsure. Later that person says "I've enjoyed talking with you; maybe we could get

together some time." While your uncertainty of the person's attraction to you may now be

reduced, your uncertainty about pursuing the relationship might increase.

Berger and Calabrese created 21 theorems from the seven axioms by combining all

possible pairs (see Appendix X). For example, axiom 1 indicates that increased talk (A)

decreases uncertainty (B), while axiom 2 claims reduced uncertainty (B) increases nonverbal

affiliative expressiveness--smiles, nods, etc. (C). The common link of B—decreased uncertainty

between these two axioms creates theorem 1: increased talk (A) increases nonverbal affiliative

expressiveness (C). Because the theorems are all based on the axioms, any problems inherent in an axiom also make the associated theorems flawed. For example, Redmond and Vrchota (1997) did not find support for axiom 7, which claims decreases in uncertainty relate to increases in liking. This means that the theorems derived from Axiom 7 are also questionable. As you will read, other scholars have also questioned some of the axioms.

8-B   Using the example of how two axioms can be linked to form a theorem. See if you can create two theorems based on the axioms. After you do, check out the list of theorems in the appendix, and see if your theorems are listed. Think of examples in your own interactions that are particularly illustrative of the theorems you identified or the other theorems. What examples from your interactions contradict what is predicted by the theorems? What occurred in those examples that are not accounted for in the theorem?

GUIDING PRINCIPLES OF UNCERTAINTY REDUCTION THEORY

We've identified four principles that emerge from a review of the concepts, axioms, theorems, and writings of Berger, Calabrese, and Bradac . These principles deal with such issues as motivation to reduce uncertainty, uncertainty with strangers, uncertainty in ongoing relationships, and how we generally reduce uncertainty. Understanding these principles will give you a better sense of how the theory applies to your own interactions.

Motivation to Reduce Uncertainty

Principle 1: Efforts to reduce uncertainty are linked to the likelihood of future interactions and reward potential (Importance) of the other person. Our response to uncertainty in our relationships is not universally the same. If we don't anticipate ever interacting with a person, we

don't necessarily need to explain and predict their thoughts and behaviors. For example, knowing you're unlikely to ever again see the stranger sitting next to you on an airplane flight reduces your need find out a lot about them (reduce uncertainty) except for being polite. On the other hand, in starting a new job, being able to understand and predict your fellow employees and boss' thoughts and behaviors will reduce your uncertainty and probably be an asset to your performance and satisfaction. While we can't always predict the likelihood of continued relationships with the people we meet, when we anticipate future interactions, we generally experience a greater need to reduce uncertainty, even as we strive to create a positive impression (Berger, 1979; Berger & Bradac, 1982).

Our relationships tend to be based either on circumstance, such as workplace relationships, or on choice, such as friends and romantic partners (Beebe, Beebe, & Redmond, 2014). For relationships of choice, we base predictions of future interactions on our degree of attraction to another person; in essence, on a person's ability to reward us. Often that reward is in meeting our social and interpersonal needs—friendship, love, confirmation of our value, etc. Berger (1979) also identifies support as a significant reward or incentive. The more we believe a person has the potential to provide rewards, the greater our desire to understand and make predictions about the other person, thus the greater desire to reduce uncertainty.

Berger and Bradac apply the principles from social exchange theory (Chapter 5) regarding rewards and costs in explaining our motivation to reduce uncertainty. We are inclined to reduce uncertainty both for individuals who can reward us, as well as for individuals who might punish us or impose other costs. For example, our motivation to gain information about a boss is as much because of the costs the boss can impose such as firing us, giving us the worst work shifts, or withholding raises, as it is about the rewards such as a raise or promotion. The

better you can predict what your boss likes and dislikes, the better position you are in to impress

him or her, assuming you like the job.

8-C   When you first meet a stranger, how confident are you in predicting the other person's

behavior? In predicting your behavior? When you are meeting up with a close friend, how

confident are you in predicting your friend's behavior? In predicting your behavior? You are

probably less confident in predicting the stranger's behavior than your friend's, and you are

probably less certain about how you will act toward the stranger. How would your uncertainty be

affected if you were to initiate a conversation and learn that the stranger has limited English

speaking skills? Why? How would such uncertainty make you feel?

Uncertainty with Strangers

Principle 2: Uncertainty in initial interactions with strangers increases if they violate social

norms. As mentioned earlier, our uncertainty increases when someone violates social norms or

our expectations about them or our relationship. We begin interactions with strangers with a

certain expectation of how that interaction will proceed based on social norms—we expect a

greeting, some casual banter about the common situation you are in, the weather, discussion of

where each person lives, education/schools, occupations, interests/sports, ending with

pleasantries and goodbyes (Kellerman, Broetzmann, Lim, & Kitao, 1989). But what would you

do if after saying "Hello," the stranger asked, "Have you seen a UFO?" "Do you sext?" or "How

do you feel about plastic surgery?" Such questions are unexpected and put you in a position of

not being able to predict where the conversation will go or what the other person is thinking.

While uncertainty reduction theory posits that we would seek additional information, we also

might be inclined to simply end the conversation and get away from this person as fast as possible—deciding the person is just too weird and perhaps even dangerous (a prediction based on knowledge of their current behavior).

Social norms are often violated in intercultural interactions when individuals from different cultures are unaware of each other's cultural norms. Consequently, uncertainty reduction theory has proven to have strong application to the study of intercultural interactions (Gudykunst & Nishida, 1984; Gudykunst, 1988; Gudykunst & Hammer, 1988; Gudykunst, 1995a, 1995b).

Uncertainty in Ongoing Relationships

Principle 3: Uncertainty is increased when people we know violate the expectations we have for them. In meeting up with a friend, suppose that friend were to be several minutes late and then rather than the usual energetic greeting, barely said "Hi," was not very responsive, and then announced he or she needed to leave. What would you think? This interaction reflects another principle identified by Berger and Bradac: uncertainty arises when those we know act in unexpected or unpredictable ways. The more possible explanations there are for why a friend acts in an unexpected way, the greater our uncertainty.

In your on-going relationships you have gained a lot of information about your partners that reduces your uncertainty and allows you to generally predict and explain each partner's thoughts and behaviors. However, a partner's deviation from your expectations raises your uncertainty and might prompt you to seek additional information to explain the deviation.

8-D Suppose that every night your romantic partner calls you to say "Goodnight," but last night you got a text instead. What thoughts would go through your mind? Does that mean that

she or he couldn't talk? Was there someone else there? Is the relationship in trouble? The more explanations you see as possible, the greater your uncertainty, and generally the greater the need to gain information to reduce your uncertainty.

Behind the Theory

James J. Bradac, one of the early proponents of Uncertainty Reduction Theory, was diagnosed with Lou Gehrig's disease (ALS) in 1987 and continued his study of communication until his death in 2004 at the age of 59. In an article published in 2001, in which he compared uncertainty reduction theory and other theories, he added an appendix in which he shared his own experiences in dealing with the uncertainties surrounding the disease (Bradac, 2001).

As Bradac dealt with early symptoms, he struggled with the uncertainty of what was wrong with him, unsatisfied with a doctor's appraisal that his problems were all in his head. He was unable to reduce his uncertainty until a doctor finally diagnosed him with "motor neuron disease." Doctors were ambivalent about how long he had to live, and that intentional uncertainty was meant to provide hope. Dr. Bradac struggled with not wanting to know details, while at the same time wanting definitive answers. When he reached the point of using a wheelchair, strangers and friends who hadn't seen him in a while, expressed uncertainty as to what was wrong with him and were uncertain of how to behave toward him. Even when dealing with adversity, Dr. Bradac continued to examine the application of the theories and concepts to which he devoted his life.

Reducing Uncertainty

Principle 4: Uncertainty can be reduced by knowledge acquisition. What are your options if you are worried that the text message "Goodnight" means the end of your relationship? You could just wait and observe your partner's behavior the next time you are together. You might ask a mutual friend if your partner has said anything about your relationship. Or, you could ask your partner directly. These three options reflect three strategies of URT for gaining information and thus reducing uncertainty: passive, active, and interactive (Berger, 1979; Berger & Bradac, 1982).

Passive strategies involve observing other people without actually interacting with them. Research by Berger and his colleagues show a preference for observing the targets of our uncertainty as they interact with other people regardless of whether we actually overhear the conversations. Think about your own experiences at social gatherings where you see someone you are attracted to but don't really know. You learn more by watching that person interact with others than you do by observing that person sitting by him or herself. The nonverbal behaviors a person displays can tell you a lot—the person's sense of humor, warmth, friendliness, enthusiasm, etc. We prefer to observe other people in different social situations, both formal and informal, as a way of acquiring more knowledge. Seeing a person only interacting with the minister at your church limits the information you can gain in comparison to observing that person at parties, interacting with friends, and interacting with your family.

As with the passive strategy, the *active strategy* doesn't involve direct interaction with the target, but it does involve indirect strategic efforts to collect information, such as Googling them, or asking other people about the target. Asking others helps to provide information that might be more reliable. Of course, the strength of any information gained from a third party depends upon the reliability of the third party.

8-E   Think about times you have asked a mutual friend about someone else. How well did the mutual friends know the targets? Were the mutual friends accurate in the information they provided? To what degree did you trust your sources?

While this indirect strategy of asking questions protects you from the embarrassment or face threat associated with directly asking the targets, there can be both positive and negative repercussions if the targets find out you've been asking about them. In a survey of 41 students in the beginning of romantic relationships, 45 percent reported asking a third party (apparently friends of the partner) about their partner's sexual health (Affifi & Lucas, 2008). How would you feel if you found out your partner had been asking your friends about your sexual health? Perhaps angry that your privacy was being invaded?

Manipulating or structuring the environment is another active strategy that involves creating a situation or introducing some stimulus to your partner, so you can see how the partner responds. For example, you might ask one of your friends to flirt with the target to determine if your target is interested in you. Such a strategy is a form of a secret test. Or, perhaps you invite your partner to your niece's birthday party to see how your partner responds to children. This particular strategy often involves some degree of interaction. One problem with gaining information through observation, however, is that targets might be aware you are watching and, therefore, alter their behavior;

A third strategy we use to gain information is direct interaction with the other person. *Interaction strategy* involves seeking information during a conversation by either asking questions or seeking reciprocity of self-disclosures. In initial interactions we typically follow a

get-acquainted pattern that begins with asking questions and providing answers for the first four or five minutes, at which point the conversation usually moves to discussing some common topics (Berger & Bradac, 1982; Berger & Calabrese, 1975: Douglas, 1991). Berger and Bradac suggest that too much question asking in an initial interaction can have a negative effect as a person begins to feel interrogated. Nonetheless, when uncertainty arises in the behavior of someone with whom we have an interpersonal relationship, we often ask direct questions to find out what's going on. In the earlier example of the friend who begins acting withdrawn, you might choose to ask what's wrong. As relationships develop, direct questions can be an effective method of gaining information. In the study discussed earlier dealing with a partner's sexual health, 75% of participants reported using such a method with their partners (Affifi & Lucas, 2008).

One strategy to consider in your initial interactions with others is to share some information about yourself, first, rather than asking the other person questions. In so doing, you will rely on the social norm of reciprocation to elicit the other person' self-disclosure; this is called the dyadic effect. Other people reciprocate certain disclosures because your disclosure conveys trust and creates a sense of obligation (Burgoon, J. K., Stern, L. A., & Dillman, L., 1995). This strategy is limited, of course, by the fact that self-disclosures must be appropriate to the given situation or relationship. Sharing your high grade point average with a student you've just met who is embarrassed by a low GPA probably won't result in reciprocal disclosure.

Applying Theory to Research: On-line Dating and Uncertainty Reduction Strategies

You might have experienced or can imagine that there is a lot of uncertainty surrounding the use of on-line dating services like Match.com or e-Harmony so the principles of uncertainty

reduction theory should readily apply there. One study surveyed 562 users of such dating services and found that the greater respondents' personal safety concerns, the more frequently they engaged in uncertainty reduction. They also found that the greater the concern with the partner misrepresenting him or herself, the more frequent uncertainty reduction was. In addition, the more participants engaged in uncertainty reduction, the more likely they were to self-disclose. Why do you think such findings occur among on-line daters?

The researchers also examined five specific methods for reducing uncertainty and found all five were used, though some more than others. The five were: 1) Googling the prospective date (active), 2) saving and checking consistency of emails and chats (active), 3) comparing photos to information in the profile (passive), 4) asking follow-up questions in email or IM to verify their identity (interactive), and 5) asking questions on the phone about information from the profile, emails, or IMs (interactive). Which of these five have you or would you use the most? The least? The interactive strategies of asking questions were used the most and Googling the least. How does this compare to your choices? Why questions the most and Googling the least? The researchers point out that because profile information is limited in dating services, you don't know the name of the other person so Googling is limited until later in the relationship. The Study: Gibbs, J. L, Ellison, N. B., & Lai, C. (2011). First comes love, then comes Google: An investigation of uncertainty reduction strategies and self-disclosure in online dating. *Communication Research*, 38. 70-100.

UNCERTAINTY REDUCTION THEORY EVOLUTION, AMMENDMENT, AND CRITICISM

As you've read, uncertainty reduction theory was originally developed to explain what happens in initial interactions between strangers. Since its introduction, however, the theory has been expanded to other communication contexts. Additional axioms have been developed, and the original axioms have been challenged and amended. Some of these modifications have included the concept of global uncertainty, predictive outcome value theory, and the impact of affective (emotional) responses.

Adding Axioms

One of the most significant changes to uncertainty reduction theory is its application to contexts beyond initial interactions between strangers. The theory has been applied to ongoing interpersonal relationships, social networks, intercultural interactions, health communication, and organizations (Berger, 2011). Berger (1986) captures the expansion of his theory:

> When people are unsure of their conversational partners' actions and intentions, the flow of interaction is disturbed and interaction becomes effortful. For example, first dates, marriage proposals, and interactions with foreigners are difficult precisely because individuals involved in them are uncertain of what is expected of them and how others will respond to them. (p. 35)

William Gudykunst, Seung-Mock Yang, and Tsukasa Nishida (1985) found support for the theory as it applied to college students in three relationships (acquaintances, friends, and dating) and within three cultures (United States, Korea, and Japan). However, some of the axioms and theorems did not fit these contexts. For example, Gudykunst and Nishida (1984) report that cultures differ in the application of uncertainty reduction strategies. Gudykunst et al. (1985) note, as do Berger and Calabrese, that making such applications requires broader

boundary conditions, since the original axioms and theorems were developed within the scope and boundary of initial interactions within the U. S. culture.

Malcolm Parks and Mara Adelman (1983) conducted a longitudinal study of college students in romantic relationships and found that those couples who broke up after three months reported significantly more uncertainty than those who stayed together. However, the study raised some questions about the theory. For example, Axiom 1, which states that the amount of communication relates to the level of uncertainty, was not strongly supported. Specifically, the amount of communication reported at the beginning of the study did not relate to subsequent uncertainty. Parks and Adelman observed that perhaps, contrary to Axiom 1, it was the amount of *new* information rather than simply information, which might decrease uncertainty.

Parks and Adelman also studied the active strategy of gaining information from third parties by examining the impact of the partner's social network (friends and family). They found that communication with the partner's network related to less uncertainty. Berger and Gudykunst (1991) generated an additional axiom with a corresponding set of theorems based on the work of Parks and Adelman. This additional axiom and theorems reflects efforts to expand the scope and boundaries of the original theory.

Axiom 8: Shared communication networks reduce uncertainty, whereas lack of shared networks increases uncertainty.

8-F   Reflect on your own relationships with friends and romantic partners and think of a time where you felt uncertainty and turned to people who knew your friend/partner for more information. What impact did that information have on your level of uncertainty? In general,

how did you feel knowing there was a third party you could turn to for information about your friend/partner? Do your experiences match the prediction that you've experienced less uncertainty in relationships when you had third parties you could turn to for information about your friends/partners?

James Neuliep and Erica Grohskopf (2000) were interested in the role that uncertainty reduction might play in how satisfied participants might feel about the communication that occurs in an initial interaction between strangers. Using a college student sample, they found that the lower levels of uncertainty related to higher levels of satisfaction with the communication that took place. From this they proposed a ninth axiom be added to uncertainty reduction theory:

Axiom 9: During initial interaction, as uncertainty decreases, communication satisfaction increases.

While Neuliep and Grohskopf did not extend this axiom to the development of theorems, such an extension would identify relationships between communication satisfaction and the variables identified in the other eight axioms such as amount of verbal communication and liking.

Kathy Kellerman and Rodney Reynolds (1990) examined factors that motivate people to reduce uncertainty, and they identified two factors related to the level of uncertainty: deviance (acting in an unexpected manner) and incentive value of the target (the ability of a person to meet our needs, for example, give us a ride somewhere). On the basis of their study they suggested adding two more axioms:

● *Axiom: As the target's behavior becomes more deviant, the level of uncertainty increases.*

● *Axiom: The greater the incentive values of the target, the lower a person's level of uncertainty.*

Apparently, the more we perceive a person as able to meet our needs, the more confident we feel about predicting and explaining that person's behaviors; therefore, we feel less uncertainty.

As the theory is expanded to other contexts, scholars are likely to create additional axioms. For instance, in a study of married couples, the overall finding presented by Theodore Avtgis (2000) could easily be considered a URT axiom: "…as uncertainty between spouses decreases, reports of emotional and social support increase (p. 363)." Avtgis found a relationship between how much spouses know about each other (level of uncertainty) and reports of spousal social support (being able to count on the other or turn to the other for advice) and emotional support (caring).

Challenging Some Axioms and Theorems

The research to validate the axioms and theorems discussed in this chapter has produced mixed results, both in terms of the context of initial interactions as well as when applied to other contexts. Axiomatic theories are inherently subject to criticism because the axioms themselves are often not well-grounded, and the theorems tend to oversimplify the world and thus ignore intervening variables. For instance, uncertainty reduction theory does not take into account that some people tolerate uncertainty better than others. As a matter of fact, entire cultures vary in terms of their tolerance for uncertainty. Greece and Portugal represent countries with extremely low tolerance while Jamaica and Singapore are the most laid back (Hofstede, 1980). How

tolerant of uncertainty do you think the United States is as a culture? According to Hofstede, the US tends more toward being tolerant of uncertainty than intolerant. So, not all the axioms apply across cultures, or even across individuals.

The axioms and theorems also fail to take into account that not all information has the same impact. We might find out negative or disconcerting information about another person that leads us to want to end any interactions. This might explain study results that found no linear relationship between how long strangers talked and their level of attraction. This is in contrast to theorem seven's prediction of a relationship between the amount of communication and liking (Redmond & Vrchota, 1997).

Berger recognized that the relationship between attraction and uncertainty is more complex than initially posited in the original axiom (Berger & Gudykunst, 1991). Part of this complexity has to do with the fact that attraction contributes to efforts to reduce uncertainty, rather than the other way around. So rather than being a simple linear relationship, something like this can occur: you're attracted to someone, which motivates you to find out more; you find out more and reduce uncertainty; then, assuming the information is positive, your attraction increases. Uncertainty and its reduction are undoubtedly more complex than the original theory suggests.

In discussing the relationship with affective responses Berger and Gudykunst (1991) observed, "…contrary to the original version of URT, high levels of uncertainty may produce either positive or negative affect, and that in the process of acquiring information to reduce these uncertainties, persons may have either positive or negative affective responses (p. 37)."

8-G   Think of your own relational experiences with uncertainty. Under what conditions did you respond positively? Negatively? What made them different?

Global Uncertainty

William Douglas (1991) generated another example of modifying the boundaries of uncertainty reduction theory. Douglas asserted that URT needed to take into account variations in people's "global uncertainty"—global uncertainty refers to the level of confidence people have in knowing what to generally expect in any initial interaction. In Douglas' studies, he found that those who felt high global uncertainty reported feeling more awkward and less satisfied in initial interactions, avoided conversations with strangers, saw themselves as less effective, developed less satisfying long-term relationships, and felt less communicatively competent and more communicatively apprehensive than those with low global uncertainty. Douglas observed that having high global uncertainty reduces people's ability to effectively use information-seeking strategies to reduce uncertainty, thereby reducing their ability to even form relationships.

Assess Your Self: Global Uncertainty*

How many of the following statements apply to you?

1. I am good at predicting how strangers will behave.

2. Generally, I am able to accurately predict how much a stranger will like me.

3. I am able to accurately predict a stranger's attitudes in general.

4. In general, I am able to accurately predict a stranger's feelings and emotions.

5. I think I know people pretty well after we've met for the first time.

The above statements reflect qualities associated with global uncertainty. The fewer the number of statements you felt describe you, the more global uncertainty you might have. How accurately does your total match your own feelings of global uncertainty in initial interactions? Which of the statements applies to you the least? Why? Which do you feel best describes you? Why?

*Adapted from Douglas (1991, p. 362).

Predicted Outcome Value Theory (POV)

Is our main goal in interacting with strangers really just to reduce uncertainty? Michael Sunnafrank (1986) posits in his Predicted Outcome Value Theory (POV) that the main reason for interacting with strangers is to determine whether developing relationships with them is likely to have positive or negative outcomes. To assess the rewards and costs of a potential relationship people seek information, and thus reduce uncertainty about future outcomes. One reason for Sunnafrank's focus on predicted outcomes is because initial interactions with strangers are often routinized and have limited reward value, in and of themselves; thus, a person's focus is on predicting the reward potential of future interactions.

8-H Think about your own encounters with new people. When you talk to them, how focused are you on gaining information about them? When the interaction is over, to what degree do you think about whether that was a pleasant or unpleasant interaction and subsequently decide whether you would like to interact with that person again?

Sunnafrank revised the original seven uncertainty reduction theory axioms by adding predictive outcome value as a variable that impacts the relationships among the original URT variables. For example, POV predicts that we are more attracted to people, the more we predict positive outcomes. Combining this notion with URT suggests that the more uncertain we are of others (unable to make outcome predictions), the less likely we are to be attracted to them or seek future interactions. Additionally, Sunnafrank points out that we are likely to guide initial conversations to topics that allow us to make the best predictions. If you are a football fan, you might bring this topic up to find out if the other person likes football. Finding out the other person hates football would probably lead you to predict a negative outcome of a future relationship. While this is a simplification, our judgment of attraction is often based on the degree to which we share values and interests with another person.

The Impact of Affective (Emotional) Responses

Uncertainty reduction theory was developed to explain how people thought about and behaved toward uncertainty, but it did not address how people felt about their uncertainties. Affective responses to uncertainty, such as stress and anxiety, are likely to impact the validity of the URT axioms and theorems. Stress tends to be a more general emotional state of worry, concern, or nervousness about what is happening or might happen; for instance, when having to cope with change. Anxiety might emerge from stress but has the added quality of fear. Afifi and Weiner (2004) argue that rather than being motivated by uncertainty as claimed in URT, uncertainty actually leads to anxiety and it is that anxiety that contributes to the motivation to seek information.

8-I   Consider a current situation in which you are experiencing uncertainty. What feelings are you experiencing in response to this uncertainty? Which factor is stronger in motivating you to seek information to reduce the uncertainty: reducing the emotions you are feeling or increasing your level of understanding? What other ways are there for you to reduce the feelings without seeking additional information? Sometimes we're able to minimize the effect of the uncertainty by ignoring it, reframing it as something that is unimportant, or ultimately, ending the relationship. Have you used any of these?

RELATED THEORIES

Uncertainty reduction theory is not the only theory to deal with uncertainty. Other theories have been generated that also deal with uncertainty and which either extend URT to different contexts or reach different conclusions, such as predicted outcome value theory (POV). Some theories focus on uncertainty as it occurs in all aspects of our lives, and other theories focus on how decisions are affected by incomplete or ambiguous information or choices.

Differences among these theories are partially caused by differences in the meaning of "uncertainty." It's a bit ironic that there is ambiguity among theories focused on managing uncertainty. One reason for differences is the context or scope of the theories. For example, uncertainty reduction theory originally focused on just initial interactions between strangers, while the context of health and medicine has been the focus of another theory called uncertainty management. One general difference between other theories and URT is that other theories see humans as sometimes preferring ambiguity or not knowing to reducing uncertainty. Suppose you are in a romantic relationship, but you think your partner is losing interest. URT would predict

that you would directly ask your partner, so you could reduce your uncertainty. But, perhaps you decide you'd rather not know, hoping that if you don't bring up the subject the relationship will last longer. Additional theories related to URT that we'll discuss include anxiety-uncertainty management theory, uncertainty management theory, and theory of motivated information management.

8-J   Have you ever known someone who had some physical ailment but refused to seek medical advice? Why do you suppose the person didn't want to know? Do you think he or she was afraid of the diagnosis? Sometimes we choose uncertainty over certainty; uncertainty leaves us with hope, while certainty removes it. Was this the case in your example?

Anxiety-Uncertainty Management (AUM)

Though not originally labeled as anxiety-uncertainty management theory, Gudykunst and Hammer (1988) extended uncertainty reduction theory to initial intergroup/intercultural interactions and added anxiety as a factor affecting people's thoughts and behaviors. Gudykunst (1988) was interested in the unique factors that influence interactions between people who come from different groups or cultures. He identified two such factors: uncertainty and anxiety. He recognized that people feel anxious about interacting with others whose culture differs from their own. His theory sought to identify the aspects of intercultural interactions that affect and are affected by uncertainty and anxiety.

If we exceed our maximum threshold for uncertainty or anxiety, Gudykunst (1993) claims we are unable to communicate effectively—we are unable to interpret or predict. The

minimum level occurs when there is so little uncertainty or anxiety that we become bored or disinterested in the other person. When uncertainty or anxiety is below the minimum thresholds we lose our motivation to interact—all mystery is gone. The thresholds for anxiety and uncertainty act somewhat independently; for example, we might experience low uncertainty but exceed the maximum threshold of anxiety. Gudykunst (1993) links anxiety and uncertainty in intercultural interactions between strangers to social identity (self-concept), motivation, reactions to strangers, social categorization, situational processes, connections to strangers, mindfulness, thresholds, and knowledge of cultures.

Uncertainty Management Theory

Dale Brashers' (2001) definition of uncertainty provides some sense of how he and his colleagues have extended the boundaries of uncertainty reduction theory: "Uncertainty exists when details of situations are ambiguous, complex, unpredictable, or probabilistic; when information is unavailable or inconsistent; and when people feel insecure in their own state of knowledge or the state of knowledge in general (p. 478)." Brashers has been particularly interested in how people handle uncertainty within the context of health and medical decisions.

Brashers and his colleagues (2000) propose that people appraise uncertainty for its potential harm or benefit, which is also associated with emotional responses (e.g. hope, optimism, thrill, torment, insecurity, anxiety). These appraisals and emotional responses motivate behavioral and psychological actions intended to manage uncertainty. Working with AIDs patients, Brashers and his colleagues (2000, 2001) found that sometimes people wish to maintain uncertainty by avoiding information or even seeking information to create or increase

uncertainty such as getting alternative diagnoses. Ambiguity about one's fate when faced with disease can produce a more positive emotional response than can certainty.

Thus, the crux of this theory is that we do not respond to all uncertainty in the same way, and we engage in a process of appraising that uncertainty and related emotions as we decide on what actions to take. Brashers' (2007) writes that "Learning to manage uncertainty is an important life skill that communication researchers can help people develop (p. 214)." How skillful are you at managing the uncertainties you encounter every day?

Theory of Motivated Information Management (TMIM)

Walid Afifi and Judith Weiner focus on uncertainty in interpersonal interactions and identify three phases: interpretation, evaluation, and decision making. Afifi and Weiner's (2004) theory of motivated information management (TMIM) begins with arousal of uncertainty in the *interpretation phase* where a discrepancy occurs between what people know and what they want to know. Such discrepancy activates anxiety and motivates people to manage that anxiety. In the *evaluation phase*, people assess two issues: what are the outcomes that are likely to occur from searching for information (outcome assessment), and how able do people feel they are at being able to reduce the anxiety through their search (efficacy assessment).

Afifi and Weiner identify three choices people reach in the *decision phase*: 1) seek relevant information, 2) avoid relevant information, or 3) reappraise the situation. Seeking information includes both the direct and indirect methods identified in uncertainty reduction theory. Avoidance can be active with people going out of their way to not get information to reduce uncertainty or passive with people simply letting things happen. In reappraising the situation, people can reconsider the uncertainty and mentally reframe the issue as unimportant,

thereby reducing or eliminating their anxiety. Perhaps you've used reappraisal strategy to decide that your uncertainty about the grade you got on an exam on Friday isn't worth worrying about all weekend.

Afifi and Weiner recognize that reducing uncertainty doesn't stop with just making a request for more information. A number of factors influence the information provider. Terminal cancer patients often ask their physicians how long they have to live. Physicians concerned with patient depression might try to present a hopeful outlook by providing an ambiguous response. Afifi and Weiner envision the information provider also going through evaluation and decision making phases in managing information.

APPLYING UNCERTAINTY REDUCTION THEORY TO EVERY DAY COMMUNICATION

The application of uncertainty reduction theory (and related theories) should be self-evident. You should find that the theory applies in some way to just about any of the uncertainties you face. While you constantly face uncertainties (what am I going to fix for dinner? when do I need to do laundry? what should I do this weekend? should I go to graduate school?), our concern in this textbook is on the uncertainty that is reflected in and managed by our communication with other people. Such a focus still covers a lot of territory—from uncertainty about an assignment given by a professor, or a task assigned by a boss, to how your parent's will react to your wanting to travel with friends over spring break, or why your romantic partner isn't calling as often.

As we consider uncertainty, we weigh how uncertain we are with how important it is to reduce that uncertainty and how best to go about it. Being unsure of a friend's weekend plans is a

minor uncertainty for most of us, and you probably would have little hesitation calling a friend to find out. But finding out the weekend plans of someone you're interested in romantically is a little more anxiety producing. You might use indirect strategies and ask mutual friends if they know what the other person is doing. As you have read, managing uncertainty is not as simple as simply asking for information.

Uncertainty reduction theory was originally focused on initial interactions between strangers, the process of reducing that uncertainty, and the factors that affect that process. If this theory is valid, you should be able to identify the factors in your own interactions with strangers. Do you find yourself asking questions to learn more about the person? As you talk, are there certain uncertainties about the person that arise? To what degree do such factors as the person's nonverbal behavior or the likelihood of seeing that person again affect your desire for more information?

Uncertainty has also been linked to our personal and intercultural relationships. When you interact with a stranger from another country do you feel greater uncertainty than when you interact with someone from your own culture? Anxiety-uncertainty management theory claims we feel anxiety in such interactions. How true is that for you? The theory also indicates our uncertainty and anxiety are affected by such things as our knowledge or lack of information of the other culture, our own strong cultural identity, and our motivation to build a relationship. Think about how knowing such information might affect your future interactions with people, groups, or cultures different from your own.

Finally, uncertainty is an ongoing factor in developing your interpersonal relationships. Relational development involves two people learning about each other through observation and self-disclosure. When information is not forthcoming or when your partner behaves in an

unexpected manner, your uncertainty increases. Which of the following would worry you the most: uncertainty about your feelings toward your partner, uncertainty about your partner's feelings toward you, or uncertainty about where the relationship is going? Which of those is likely to have the most impact on the relationship?

CHAPTER SUMMARY

Elements of Uncertainty Reduction Theory

- URT was originally created to explain the communication process that occurs when two strangers interact. Over the years, it has evolved to include interactions within established interpersonal relationships that may also experience stressful periods of uncertainty.

- Uncertainty means having a number of possible alternative predictions or explanations; the larger the number of alternatives, the greater the degree of uncertainty.

- There are several different types of uncertainty, including partner uncertainty, self-uncertainty, relational uncertainty, cognitive uncertainty, and behavioral uncertainty.

- Uncertainty reduction is primarily aimed at making sense of something, thereby increasing our ability to accurately predict or explain it.

- The seven variables of uncertainty reduction in initial interactions are: amount of verbal communication, nonverbal affiliative expressiveness, information-seeking behavior, intimacy level of communication content, reciprocity, similarity, and liking.

- Berger and Calabrese created seven original axioms (statements or propositions of a relationship between variables that are assumed to be true) based on the seven variables and from those axioms derived 21 ways those axioms relate to each other as theorems.

Guiding Principles of Uncertainty Reduction Theory

- *Principle 1: Efforts to reduce uncertainty are linked to the likelihood of future interactions and reward potential (importance) of the other person.*

- *Principle 2: Uncertainty in initial interactions with strangers increases if they violate social norms.*

- *Principle 3: Uncertainty is increased when people we know violate the expectations we have for them.*

- *Principle 4: Uncertainty can be reduced by knowledge acquisition.* Passive, active, and interactive strategies can be used to acquire information.

Uncertainty Reduction Theory Evolution, Amendment, and Criticism

- Over the years the application of URT has expanded beyond initial interactions with strangers to apply to ongoing interpersonal relationships, social networks, intercultural interactions, health communication, and organizations.

- As the theory continues to evolve, more axioms have been added that deal with information gained from social networks, satisfaction, deviance, and incentives. Additional axioms are likely as the theory is expanded to include more contexts.

- Because of the way they are constructed, axiomatic theories are inherently subject to criticism, and URT is no exception.

- URT has been criticized for not taking into account that some people tolerate uncertainty better than others, that not all information has the same impact, and that people have different levels of global uncertainty, which may affect their uncertainty reduction desires and strategies.

- In contrast with the goal of reducing uncertainty, Predicted Outcome Value Theory (POV) holds that the main reason we interact with strangers is to determine whether a future relationship will be rewarding or costly.

- The original URT does not address the impact of affective (emotional) responses, such as stress and anxiety.

Related Theories

- There are other theories that deal with uncertainty. Differences among these theories are partially due to differences in the meaning of uncertainty.

- Anxiety-Uncertainty Management (AUM) extends URT to intercultural interactions and adds anxiety as a fact affecting people's thoughts and behaviors.

- Uncertainty Management Theory maintains that we do not respond to all uncertainty in the same way, and we engage in a process of appraising uncertainty and the accompanying emotions as we decide on what actions to take.

- Theory of Motivated Information Management (TMIM) posits that there are three phases of uncertainty in interpersonal interactions: interpretation, evaluation, and decision.

Applying Uncertainty Reduction Theory to Every Day Communication

- If you consider any uncertainties in your life, you should find that URT applies in some way.

- As you consider uncertainty, you weigh how uncertain you are with how important it is to reduce that uncertainty and how best to go about it.

- Uncertainty is an ongoing factor in developing your interpersonal relationships.

FOR REVIEW

Key Terms

Uncertainty	Partner Uncertainty
Self Uncertainty	Relationship Uncertainty
Cognitive Uncertainty	Behavioral Uncertainty
Uncertainty Reduction	Axiom
Theorem	Passive strategy
Active strategy	Interaction strategy
Predicted outcome value	Anxiety-Uncertainty Management Theory (AUM)
Uncertainty Management Theory	Behavioral Talk

Theory of Motivated Information Management (TMIM)

Questions for Review

1) Define and explain "uncertainty."

2) How does uncertainty reduction explain what occurs in initial interactions between strangers?

3) Explain how self, other, and relational uncertainty relate to cognitive and behavioral uncertainty.

4) How does another person's importance affect uncertainty reduction?

5) In what ways can uncertainty occur in a long-standing romantic relationship?

6) What is the difference between passive, active, and interaction strategies for reducing uncertainty?

7) Choose one axiom. Explain what it means and provide an example.

8) Select a theorem you believe is **not** valid and explain why.

9) What are some challenges that have been raised against uncertainty reduction theory?

10) What are the significant differences between the additional theories related to uncertainty reduction theory and the original uncertainty reduction theory?

CLASSROOM ACTIVITIES

1) Initial Uncertainty: Pair up with another student in class that you have not interacted with before. Carry on a "getting-acquainted" conversation for five minutes. After you are done, discuss the seven axioms of uncertainty reduction theory and decide which of those axioms most applied and least applied to your interaction. Discuss why.

2) Video Challenge: Think of any movie or TV show you have watched where people were faced with uncertainty about a partner and tried to reduce that uncertainty using passive or active strategies. How successful was the character in reducing uncertainty? What factors affected the success or failure of the strategy? In groups of five students, share your answers and find the best example of the use of a passive strategy and the best example of an active strategy.

3) Create an Axiom: Think about your own experiences with uncertainty and try to think of something that occurred that is not explained very well by the theories presented in this chapter. Create your own axiom that identifies some other factor or variable that would better explain your experience. For example, perhaps you found that when you tried to reduce uncertainty about a relationship your partner refused to give you a straight answer, which created more uncertainty. Your axiom might be: Efforts to reduce uncertainty that are thwarted by a partner are a source for new uncertainty.

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Appendix:

Original Uncertainty Reduction Theory Theorems (Berger & Calabrese, 1975)

Theorem 1: Amount of verbal communication and nonverbal affiliative expressiveness are

positively related.

Theorem 2: Amount of communication and intimacy level of communication are positively

related.

Theorem 3: Amount of communication and information seeking behavior are inversely related.

Theorem 4: Amount of communication and reciprocity rate are inversely related.

Theorem 5: Amount of communication and liking are positively related.

Theorem 6: Amount of communication and similarity are positively related.

Theorem 7: Nonverbal affiliative expressiveness and intimacy level of communication are

positively related.

Theorem 8: Nonverbal affiliative expressiveness and information seeking inversely related.

Theorem 9: Nonverbal affiliative expressiveness and reciprocity rate are inversely related.

Theorem 10: Nonverbal affiliative expressiveness and liking are positively related.

Theorem 11: Nonverbal affiliative expressiveness and similarity are positively related.

Theorem 12: Intimacy level of communication content and information seeking are inversely

related.

Theorem 13: Intimacy level of communication content and reciprocity rate are inversely related.

Theorem 14: Intimacy level of communication content and liking are positively related.

Theorem 15: Intimacy level of communication content and similarity are positively related.

Theorem 16: Information seeking and reciprocity rate are inversely related.

Theorem 17: Information seeking and liking are negatively related.

Theorem 18: Information seeking and similarity are negatively related.

Theorem 19: Reciprocity rate and liking are negatively related.

Theorem 20: Reciprocity rate and similarity are negatively related.

Theorem 21: Similarity and liking are positively related.