An examination of interactions between computer support staff and end users

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AN EXAMINATION OF INTERACTIONS BETWEEN
COMPUTER SUPPORT STAFF AND END USERS

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A thesis submitted in partial fulfillment
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is approved in partial fulfillment of the requirements for the degree of

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ABSTRACT

An Examination of Interactions between Computer Support Staff and End Users

By

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For those employed as information technology support professionals, the message they are receiving is that communication skills are as important as any credential or certification they may possess in terms of staying competitive in the current job market. The goal of this study was to determine the importance of communication skills in interactions between information technology support staff and the end users they support in relation to factors such as stereotypes and expectations. The results of this study suggest that positive end user evaluations of these communication interactions do not rely solely upon the communication skills of the technician, but instead may also be significantly influenced by other equally important factors. However, an argument can certainly be made for technicians to develop communication skills, as these skills should be positively valued by end users and as a result, should aid in reducing end user uncertainty about future interactions with technicians.
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CHAPTER 1

INTRODUCTION

When you call a tech support person to come and move your computer, be sure to leave it buried under half a ton of postcards, baby pictures, stuffed animals, dried flowers, bowling trophies, and Popsicle stick art. We don't have a life, and we find it deeply moving to catch a fleeting glimpse of yours.

Rule #3 from “Rules to Live By from the Tech Support Department” (2002)

NICK BURNS: You downloaded it? (laughing to himself) That's amazing, considering it's impossible! You have to import it.

EMPLOYEE: Import, through my folder?

NICK BURNS: Move! Let me teach you a lesson here. First you open up the file folder import in the download box, open Outlook 6.0 folder, find address file, and click “import”. Was that so hard?

EMPLOYEE: Yeah, actually it was, yeah.

“Nick Burns, your company's computer guy” (2000)

As computer technology continues to progress, rapidly increasing in complexity, communication between those who support the technology and those who actually use the technology has followed suit, rapidly increasing in its perplexity. On the one hand, frustrated end-users (those professionals who use computer technology as a tool to assist in conducting their job responsibilities) furiously try to keep pace with the ever-changing
rules, passwords, and confusing technical jargon. On the other hand, information
technology (IT) support personnel (those professionals who provide technical support for
end-users) are caught in a never-ending loop of learn it, upgrade to it, and support it. The
result is a growing frustration on both sides as end-users become more and more
dissatisfied with the help they receive and IT support personnel begin to feel mounting
pressure to add ‘communication skills’ to the plethora of information technology skills
they must master to stay afloat in an increasingly competitive job market.

The apparent lack of communication skills among technical support staff workers
appears to be a well-documented phenomenon. Ganzel (2001) offers several accounts in
which corporate reorganization and down-sizing resulted in the removal of the
management layer that traditionally provided a buffer between technical staff members
and end-users. As a result, Ganzel found that technical staff members had problems
dealing with end-users, due in part to a lack of communication skills. Roger Dore, a
former independent consultant interviewed for Ganzel’s article, remembered a project
involving programmers working at a large bank with 7,000 employees: “They had a lot of
trouble interfacing with direct users...these were shy people, not skilled in building
relationships” (p. 58).

Moad (1995) reported a similar challenge faced by the Information Technology
division of Fannie Mae. Wanting to move to new client/server technologies several years
ago, the IT division, headed by Andrew Weiss, ran into an unexpected roadblock: users
and managers. “They wouldn’t work with us,” recalls Weiss, “They wouldn’t even talk to
us.” The reason? Weiss found that IT staff, analysts and developers rich in knowledge
concerning the client/server technologies, were lacking the communications skills necessary to effectively work in teams with end-users.

The reaction to this skills deficit has arrived in the form of articles, books, websites, and training courses, touting the buzz-phrase “soft skills,” which refers to non-technical business skills such as communication skills, although the references to this term occasionally include leadership, management, and customer service skills. Titles such as “On the Trail of Soft Skills Training,” “Hard Facts on Soft Skills,” “Hard Times Require Soft Skills,” “Employers Say Job Hunters Need Soft Skills Training,” and “E-Business Eats Up Culture—Firms’ Soft Skills Predict Hard Performance Facts” are appearing with increased frequency in such traditionally ‘techie’ publications as NetworkWorld, ComputerWorld, ComputerWeekly, and EWeek. Whether providing technical support for end-users, providing product-specific support, or even attempting to climb the managerial ranks within their own organization, IT workers are bombarded with the message that ‘soft skills’ are crucial skills to develop, and in some circumstances move up in prominence over technical skills.

However the question is, will sending the IT support staff off to soft-skills training fully address the communication gap between IT support personnel and the rest of the organization they support? Communication skills certainly play a key role for service providers in general, strongly influencing the level of satisfaction reported by customers (Ford, 2003). Still, perhaps it is possible that the communication problem extends past speaking and listening skills to include other factors that may be influencing the expectations held by IT support staff and end-users about each other. Examples of these factors include the contrasting beliefs and values that may exist among organizational
micro-cultures, and popular culture stereotypes that may have influenced the way technical and non-technical people view each other.

The study of organizational communication, and communication between organizational micro-cultures in particular, borrows some of its defining features from the area of intercultural communication. Studies of intercultural communication examine communication between people of different cultural backgrounds, where culture may be viewed as a shared set ideas, norms, traditions, symbols and assumptions about life. Such studies may encompass cultural boundaries identified in terms of nationality, ethnicity, religion, or even political or social lines. Similarly, Martin (2002), who offers a framework for examining organizational cultures, explains,

"When organizations are examined from a cultural viewpoint, attention is drawn to aspects of organizational life that historically have often been ignored or understudied, such as the stories people tell to newcomers to explain 'how things are done around here,' the ways in which offices are arranged and personal items are or are not displayed, jokes people tell, the working atmosphere...the relations among people...and so on." (p.3).

The differentiation perspective, one of three theoretical perspectives identified by Martin for organizational culture studies, focuses particularly on organizational micro-cultures. From this perspective, micro-cultures do exist in organizations. Within such groups, members share a clear and mutual understanding of their roles in the organization, while external relationships with other micro-cultures vary from congruous, to autonomous, to antagonistic (Martin, 2002). Likewise, Boisner and Chatman (2002)
identify organizational micro-cultures as those groups that share a set of norms and beliefs, although such groups do not necessarily form around organizational boundaries such as departments or functional goals, nor must they be formed intentionally or consciously (p. 6). Hofstede (1998) adds further to this definition, offering cross-organizational groups such as professions or industries as possible organizational units (p. 1). With respect to these definitions, technical support staff seem clearly to have features of an organizational micro-culture, including their own mutual understanding among co-workers, a common technical jargon, common attitudes toward other departments or ‘micro-cultures’ within an organization, and an overall association among group members as information technology professionals. Terrence Seamon, a trainer with NUI Corp observed that “technical people are real smart, but that often comes with a disdain for their customers or for the annoyingly messy people who now report to them” (Ganzel, 2001, p. 57). End-users as well, while not necessarily defined by organizational departments or even functional goals, may be considered a micro-culture with respect to their relationship with technical support staffs, in that they all share the commonality of asking for and receiving technical assistance from technical support staffs. This aligns with Hofstede’s definition of organizational culture as “the collective programming of the mind which distinguishes the members of one organization from another” (Hofstede, 1991, p. 262).

Having established the existence of organizational micro-cultures, the question turns to the factors having an impact on communication interactions between those micro-cultures. Expectancy violation theory (EVT) suggests that several factors may exist in a communication interaction that could affect the way the communication outcome is both
anticipated before and interpreted after-the-fact by participants, in this case IT support staff and end-users. Expectancy refers not only to behavioral patterns that are commonly expected in a given interaction, but also the degree to which certain behaviors are considered preferable by participants (Burgoon, 1995). EVT, while typically applied to non-verbal communication (Burgoon, Coker, & Coker, 1986; Burgoon & Hale, 1988; Burgoon, Manusov, Mineo, & Hale, 1985; Burgoon, Newton, Walther, & Baesler, 1989; Burgoon & Walther, 1990), has also been used in studies of intercultural communication (Burgoon, 1992, 1993; Gudykunst & Ting-Toomey, 1988; Lobdell, 1990). Given the similarity between traditionally defined cultural groups and organizational micro-cultures, this theoretical framework may also be relevant with respect to organizational communication between IT support staff and end-user micro-cultures.

Expectation violations refer to behaviors that do not correspond with the expectations of one or both participants in a communication interaction. The degree to which a behavior must deviate from expected conduct to be considered a violation varies, however, particularly among cultural lines (Burgoon, 1995). Yet it is not so much a question of whether or not expectancy violations are likely to occur during interactions between organizational micro-cultures as it is a question of what effect those violations will have. Afifi and Metts (1998) found that expectation violations were fairly routine in their study of ongoing relationships (where culture was not a consideration). However, these violations vary considerably in terms of perceived significance to the relationship.

In terms of consequences of these violations, EVT maintains that positively valanced violations will produce more favorable interactions than will behaviors that conform to
expectations, whereas negatively valanced violations will produce the opposite effect, resulting in more unfavorable interactions than will behavior that conforms to expectations (Burgoon, 1995). Similarly, Afifi and Metts (1998) found that in ongoing relationships, negative violations tended to increase the perceiver’s uncertainty, while positive violations lead to a decrease of uncertainty. When adding organizational micro-culture as a factor, the frequency of expectation violations should conceivably be greater, as participants contend with conflicting beliefs, values, and social structure between cultures (Burgoon, 1995).

Burgoon (1995) explains that while communication expectancies between cultures are largely based on any prior experiences those cultures have in dealing with each other, any lack of experience will tend to be replaced by common stereotypes which, unfortunately, most often tend to be more negatively valenced than those of familiar cultures. Certainly, popular media have been parodying technical ‘geek’-types in television and film for many years, in such films as Revenge of the Nerds (1984), Weird Science (1985), Real Genius (1985), and Office Space (1999), as well as character portrayals on television such as Byers, Langly and Frohike (a.k.a. “The Lone Gunmen”) from the television series The X-Files (1993-2002) and The Lone Gunmen (2001), and Nick Burns from the skit “Nick Burns, Your Company’s Computer Guy” on the late-night variety show Saturday Night Live (1999, 2000). These popular examples of ‘geek’ portrayals may have influenced many end-users to view technical workers largely based on these pop-culture stereotypes. Similarly, the existence of magazine articles, cartoons, and websites targeted to IT support staff and similarly employed technical workers that essentially lampoon non-technical people (Rules to live by 2002, Tech Support Comedy
2003, Dilbert 2003) only reinforce this concept of technical support staff as existing within their own micro-culture.

**Purpose**

The purpose of this study is to examine communication interactions that occur between an organization's Information Technology support department (including departments referred to as the Help Desk, etc), and the end-users they support. This study examines whether communication problems between technical support personnel and end-users become much more identifiable when examined in terms of the colliding expectations that may exist when individuals within organizational micro-cultures attempt to communicate. This communication relationship excludes the “customer-service” related technical support available to consumers who have purchased a particular product or service, and instead focuses on the technical support provided to and supplied by members of the same organization. The research participants in this study include both members of an IT support department and end-users from different departments serviced by the IT support department. For the purposes of this study, the research group was limited to a single organization.

This study examines the significance of stereotypes and expectations in interactions between IT support staff and end-users. In order to improve communication, it is imperative (perhaps more so for IT support staff) to understand the extent to which stereotypes and expectations may influence post-interaction evaluations. IT support staff may find that when appropriate adjustments are made (such as improving communication skills) to positively violate negative expectations, the resulting shift away from
stereotypes as the primary influence on expectations will result in more positive evaluations of IT support staff interactions.

Burgoon's (1995) expectation violation theory (EVT) examines communication patterns and outcomes within the context of expectations and their violations. Whereas much of the previous work with EVT examined nonverbal communication, this study hopes to broaden the theoretical framework by examining verbal encounters (both face-to-face and over-the-phone), and extending the theory to interactions that occur between organizational micro-cultures. Although IT staff and end-users may find themselves in communication with each other for a variety of reasons (casual “water-cooler” encounters, outside of work, etc.), this study will limit its focus to the help-seeking communication that occurs between IT staff and end-users, including face-to-face technical support and telephone (help desk) support.

Review of Chapters

Chapter one provides an introduction to this study, examining the phenomenon of communication between technical support staff and end-users. It provides a brief overview of recent trends in information technology, including the ever-changing role of the IT support staff. It also provides a brief overview of the cultural implications of communication between organizational micro-cultures; particularly those members function primarily as IT support personnel, and those whose commonality is receiving technical support. Finally, the role of expectations when communicating across organizational micro-cultures is considered.

Currently there are no communication studies that specifically examine the interactions and/or expectations between technical support staff and end-users in an
organization. Thus, it is necessary to review studies that examine similar communication relationships. Chapter two presents a review of such literature, focusing primarily on communication in help-seeking contexts, and the role of expectations in communication. This review of literature then expands into a review of studies concerned with Expectation Violation Theory, including studies that have examined the influence of stereotypes and culture on expectations. It is from this review of literature that research hypotheses have been generated with the goal of increased understanding of the influence of stereotypes and organizational micro-culture on expectations.

Chapter three provides a description of the method(s) used for this study. Included is general demographic information about the participants who took part in the study, and an explanation of the procedure used to gather data (online survey) including the way participants were invited to take the survey. Next, a description of the electronic survey itself is provided, including a brief description of the pilot study used to determine the video clip used for the main survey. Following this, the actual items used in the instrument, including an explanation of the measures from which the items were adapted, is discussed. Finally, an overview of the analysis plan is presented. Chapter four presents the results to the analyses of the data collected from the surveys.

Chapter five begins with a summary of the study. Observations follow, revealing that the overall results of this study were consistent with the position that although communication skills are important, end-user evaluations of communication interactions with technicians do not solely rely upon those skills, but instead may be influenced by other equally significant factors. However IT support staff should still develop strong communication skills because of the effect those skills may have on end-users in terms of
reducing uncertainty about future encounters between end-users and IT support staff. Next, a discussion of the implications of the results provides insights into the way in which the EVT framework has been broadened by the study. Finally, recommendations for future research include considerations for survey deployment, and the possibility of expanding the focus to extend beyond a single organization, to include consumer end-users outside of the IT support person's organization.
CHAPTER 2

REVIEW OF LITERATURE

As the use of computer technology in the workplace increased over the last several decades, so too has the need for some degree of technical support, whether for the actual functioning of the machine or to support the workers who are using the machines (providing technical assistance). The U.S. Bureau of Labor Statistics reports that as of May, 2003, most people employed in computer and mathematical science occupations are employed as computer support personnel. Yet remarkably, there are no studies that have specifically examined the communication relationship between an organization's information technology (IT) support staff and its end-users. This review of literature begins with a brief review of communication studies that have examined the general topic of help-seeking (including support of technology). Next, this chapter reviews Expectation Violation Theory, and in particular the influence of stereotypes and culture on expectations. From this review of literature, several hypotheses have been generated with the goal of better understanding the influence of stereotypes and organizational micro-culture on expectations in communication interactions between IT support staff and end-users.

Help-Seeking Behavior

Although computers have become fairly prevalent in the workplace, dedicated IT support personnel (particularly within an organization) are not always readily available.
Rice, Collins-Jarvis and Zydney-Waler (1999) confirm that as information technologies become more and more central to completing tasks in organizations, assistance in using these technologies has become more and more scarce. Accordingly, they argue that end-users turn to their peers for support. In their study, the development of these so-called "informal networks" of support are examined in terms of both social structural and individual factors to measure the extent to which these factors determine which peers are sought for help, and the degree to which end-users tend to seek formal help versus seeking help from an informal network of peers.

The basis for the study by Rice et al. (1999), that focuses on an organization-wide network of help relationships, is the argument that information systems professionals (IS) wish to foster informal helping relationships among end-users, and doing so requires information to help identify just which factors influence such relationships. To test this argument, data were collected using two surveys: the first, a "baseline" survey, was implemented prior to the introduction of new technology systems; a second survey was conducted approximately six months after the introduction of the new technology. The findings suggest that end-users who reported having greater IS knowledge were more likely to seek formal IS help, whereas less-knowledgeable end-users who may only require basic assistance (or were perhaps uncomfortable with formal IS help) were more likely to seek help from colleagues. Further, the study found that those who were sought out by their peers as "Help Providers" were in fact more likely to be dissatisfied with information-sharing aspects of interdependent tasks. The authors conclude that IS professionals must find ways to promote, and even reward, informal help relationships if
this type of help is critical for the support of an organization’s information system technology.

The Rice et al. (1999) study provides an interesting and informative view of help-seeking relationships within an organization, even going so far as to take into consideration organizational, spatial, and relational proximity. It also briefly touches upon the concept of culture (or micro-culture) as an influencing factor in an end-user’s information-seeking habits, arguing that promoting help providers from within organizational departments (micro-cultures) may help to resolve conflicts that arise when technical support comes from different departments (micro-cultures). The finding that informal help-providers report a great deal of dissatisfaction in the help-provider roles they play is significant to note. Further study to discover specifically why these individuals are dissatisfied in their role as help-providers may provide insights as to whether or not these individuals have attitudes (and expectations) toward end-users that are similar to those held by IT support staff, or if their dissatisfaction stems from another entirely different basis.

Chiu’s (2000) study sought to examine factors that influenced student expectations of reference libraries, particularly in terms of help-seeking. Chiu explains that a common misperception (or expectation) among library users is that reference librarians are not helpful and, consequently, those library patrons will choose not to seek help from reference librarians. Similarly, Chiu argues that library users will seek assistance from others who they believe will be helpful, particularly those with whom they had prior knowledge (friends, colleagues), with whom the possibility of reciprocation was greater, and from those whom assistance is “obligated” (professors, teaching assistants).
Using a questionnaire, Chiu conducted a random survey of 524 students from the Chinese University of Hong Kong. This survey compared student expectations of four different help-seeking sources: professors; teaching assistants; classmates/friends; and reference librarians. In terms of help providers, reference librarians ranked the lowest among the four groups, generating a negative average rating. Among expectations of help-providers’ ability to solve student’s academic questions, reference librarians were once again ranked lowest. Chiu posits that this suggests students do not perceive “solving questions” as part of a reference librarian’s job. Overall, Chiu concluded that reference librarians may suffer from an “image problem” that prevents them from being viewed as knowledgeable or helpful by library patrons and that this lack of credibility directly affects library patrons’ tendencies to turn to them for help. Further, Chiu recommended that promoting the services provided by reference librarians may help to foster library patrons’ confidence in their ability to provide useful help. This study’s survey instrument did not include questions regarding expectation violations, although Chiu’s conclusions seem to imply that reference librarians who violated existing negative expectations of their abilities would be well received by library patrons.

Both of these studies raise important questions with respect to communication between IT staff and end-users. Do IT staff also suffer from an “image problem” that affects the way end-users view technical support interactions with them? Are IT staff personnel themselves satisfied in their role as help providers? A common thread in both of these questions is expectations—and just as important, the factors that influence those expectations. As such, this study will examine similar help-seeking communication between IT staff and end-users within an organization in terms of expectations. To assist
in this examination, this chapter will continue by reviewing literature concerned with the examination of communication in terms of Expectation Violation Theory. This review will also include literature concerned with the factors that may influence expectations; in particular stereotypes and culture.

**Expectation Violation Theory**

The theoretical framework for this study is expectancy violation theory (EVT). As explained by Burgoon, EVT “frames interpersonal communication patterns and outcomes within the context of expectancies and their violations” (1995, p. 194). A key consideration when applying this theoretical framework is the nature of participants themselves. This study is concerned with the interaction between IT support staff and end-users within an organization. As described in chapter one, an organizational micro-culture may be defined in a number of ways, from functionally defined departments, geographic locations, and so forth (Hofstede, 1998). Schein (1999) writes, “wherever a group has enough common experience, a culture begins to form...one finds cultures at the level of small teams, families, and workgroups” (p. 13). Existing research supports the notion that micro-cultures can appear at the department level, functional group level and within “organizational units that have a common occupational core and common experience” (p. 14). However it is important that when defining an organizational micro-culture that the group be sufficiently similar in terms of cultural characteristics for statements about the culture as a whole to be justified (Hofstede, 1998).

This study divides the participants up into two major micro-cultures: technicians (those employees who provide technical support as part of their job capacity); and non-technicians (a.k.a. “end-users”, those employees who receive technical support). Previous
studies have examined “unofficial” help providers within organizational micro-cultures; however this study specifically focuses on those employees who are members of a bona fide technical support department (commonly known as help desks). The non-technicians in this study may also be further broken down into subcategories: teaching faculty and support staff.

When applying EVT to intercultural communication, Burgoon (1995, p. 195) suggests that the primary “focal constructs” of the theory that would apply include expectations, expectation violations, speaker valence, and behavior valence. Given the similarity between traditionally recognized sub-cultures and organizational micro-cultures, this study has applied these focal constructs to examine communication between organizational micro-cultures. Burgoon explains the concept of expectations as inclusive of both commonly expected behaviors, as well as to the degree to which those expected behaviors are preferred. Communicator valence refers to a speaker’s characteristics, and the extent to which those characteristics affect expectations about the speaker; is the interaction expected to be positive or negative? Likewise, behavior valence is concerned with the speaker’s behavior during an interaction, and the extent to which such behavior is evaluated as positive or negative.

The way that expectations between organizational micro-cultures develop depends on a number of factors, including the nature of the ingroup and any previous interactions with members of the outgroup. Gudykunst (1993) suggests several important intergroup perceptions including knowledge of the outgroup’s culture, stereotypes, prejudices, and differences. Burgoon (1995) argues that if a perceiver’s previous knowledge or experience with a speaker is scarce (or non-existent), expectations will be more heavily
influenced by stereotypes based on the outgroup that the speaker most closely aligns with. When those expectations are based on negative stereotypes, this can lead to uncertainty and anxiety, whereas positive stereotypes (and expectations) can reduce uncertainty and anxiety (Gudykunst, 1993). Similarly, Bettencourt, et al.’s (1997) examination of the role of stereotype-based expectancy violations on perceivers’ evaluations (in ingroup/outgroup interactions) found that stereotyped expectancies have a mediating effect in extreme speaker evaluations.

In social psychology, the concept of stereotype is often linked to the concept of prejudice; in fact, one approach holds that to have knowledge of a group’s stereotype(s) is to be prejudiced toward the group (Devine, 1989). Likewise, it is held that expectations based on cultural stereotypes are typically negative (Burgoon, 1995). The idea that expectations may be influenced, even in part, by stereotypes has been a consideration in several EVT studies (Burgoon & LePoire, 1993; Chiu, 2000; Sullivan et al., 2000), and is particularly significant when considering the role expectations play, influencing even post-interactional perceptions despite behavior that should disconfirm previously held expectations (Burgoon & LePoire, 1993).

Neuberg (1994) takes the position that in order for an interaction to have an effect on changing stereotypes, two processes must occur: an individual (perceiver) must obtain information about the other individual (target) inconsistent with the accepted stereotype associated with the target’s group; and the perceiver must utilize this information to change his or her beliefs about the target’s group in general. In the absence of either, stereotype-based impressions may persist despite behavior that is contrary (violates) previously held expectations. Neuberg suggests that beyond merely violating an
expectation, in order to lessen the impact of stereotype-based expectations participants in an interaction should be motivated to form good impressions of and make good impressions on one another. Although Neuberg’s framework for predicting the outcome of stereotype-tinged encounters holds both participants in the interaction accountable for impression management, he observed that “targets are in ultimate control of their own behaviors and determine the extent to which they behaviorally confirm the perceivers’ expectancies” (p. 118). Nevertheless, two of four premises in Neuberg’s framework call upon perceivers to be motivated to form accurate impressions of their targets, and to form a good impression on their targets, suggesting that it is largely in the hands of the perceiver to see beyond the stereotype.

Similar to Neuberg (1994), Baldwin and Hunt (2002) emphasize the role of the perceiver, arguing that “for effective communication, [the perceiver] would need the skills to gather such data to make more complex predictions of the other that incorporate both individual and cultural factors” (p. 282). Stangor and McMillan (1992) continue this recognition of the responsibility of the perceiver in forming accurate impressions of targets. Their study, concerned with discovering the conditions in which expectations and group stereotypes are most resistant to change as a result of preferential memory for expectancy-confirming behavior, found that when perceivers are motivated to form accurate impressions, they are more likely to attempt to resolve expectancy-incongruent information, while those attempting to maintain their previously formed impressions are more likely to ignore incongruent information. The data suggest that the effects of expectancy congruent behaviors are more likely to occur under cognitively demanding situations, when perceivers are trying to form an evaluation of the target, or when there is

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a delay between processing information and recalling information. Because Stangor and McMillan argue that these are conditions that are more apt to occur in the real world, they hypothesize that expectancy-confirming behavior is more likely to be recalled and as a result, expectancies will be maintained.

Burgoon and LePoire's (1993) study of expectancies and the effect that confirmation or disconfirmation of those expectancies had on speaker evaluations revealed that pre-interaction expectancies indeed have a profound effect on post-interaction evaluations and can persist despite speaker behavior that conflicts with those expectancies. However, results from this research also indicate that despite the apparent persistence of pre-interaction expectancies, perceivers do not completely ignore disconfirmatory behavior; instead, this behavior combined with pre-interaction expectancies can have a significant effect on post-communication evaluations. A similar argument is echoed by Bettencourt et al. (1997), who found that stereotype-based expectancy violations do, in fact, lead to extreme post-interaction evaluations in the direction of the valance of the violation.

Building on the notion that members of an in-group tend to develop expectations for encounters with those from unfamiliar out-groups based on stereotypes, particularly when first-hand experience is not available (Burgoon, 1995), this study posits that the awareness of a stereotype may have a significant influence on expectations, and in particular the degree to which violations are unexpected.

H1: In interactions between technicians and end-users, participants who are familiar with stereotypes differ from those who are not familiar with stereotypes in terms of the degree to which expectation violations are unexpected.
Building on the previous hypothesis that familiarity with a stereotype may have a significant influence on expectations, coupled with the notion that expectancies based on stereotypes are typically negative, this study examines the relationship between awareness of a stereotype and the degree to which an expectation violation is positively valanced.

H2: In interactions between technicians and end-users, participants who are familiar with stereotypes differ from those who are not familiar with stereotypes in terms of the degree to which expectation violations are positively valanced.

Given the argument that disconfirming communicator behavior has at least some effect on post-interaction evaluations, potentially increasing evaluation of target characteristics (Bettencourt et al., 1997; Burgoon & LePoire, 1993), it is possible that individual encounters between IT support staff and end-users may have an effect on the expectations each have developed toward others in the same micro-culture. If, as Afifi and Metts' (1998) study revealed, positively valanced violations yield more positive effects within an ongoing relationship, perhaps it is also possible that as IT support staff and end-users each commit positively-valanced violations when interacting with each other, these violations may have a more far-reaching effect, positively influencing expectations not only between the two participants, but also those stereotype-influenced expectations each associate with other members of the micro-culture.

H3: Expectation violations committed by technicians that are positively valanced by end-users tend to decrease end-user uncertainty toward future encounters with other technicians.
Although this study is concerned primarily with the effect of IT staff communication behavior in communication interactions between IT staff and end-users, it may be that end-user behavior, and positively valanced violations in particular, may also decrease uncertainty held by the IT staff person toward other end-users.

**RQ1:** Do expectation violations committed by end-users that are positively valanced by technicians tend to decrease technician uncertainty toward other end-users?

**Communication Skills**

One of the predominant beliefs or “stereotypes” about technical people is that they are poor communicators, a belief that has been reinforced within the information technology industry by way of websites and magazine articles, as well as within the mainstream culture by way of stereotypical parodies (as previously mentioned in Chapter 1). Whether this reputation as poor communicators has been earned or not, the need for solid communication skills for IT professionals is undeniable. However, because of the negative nature of stereotypes (and the influence those stereotypes may have on expectations), the presumption that all technical people are poor communicators may not be entirely accurate. With this in mind, this study examines post-interaction assessments of the technician’s communication skills. Hamilton et al. (1990) noted that although behavior that is inconsistent with expectations (or that violates expectations) tends to be more readily recalled than confirming behaviors, it is not clear whether the disconfirming behavior will ultimately have an influence on judgment (p. 41). However, if the prevailing stereotype in terms of IT professionals is that they possess poor communication skills, technicians who demonstrate good communication skills should
not only be violating end-user expectation, but should also be exhibiting behavior that will be judged more positively.

H4a: End-user ratings of technician communication skills will be positively correlated to the degree to which the expectation violation committed by the technician is unexpected.

H4b: End-user ratings of technician communication skills will be positively correlated to the degree to which the expectation violation committed by the technician is positively valanced.

Communication interactions between end-users and IT support staff are, in many ways, similar to most any other help seeking type of communication interaction. As shown from the preceding review of literature, factors such as stereotypes and expectations can influence the way those interactions are evaluated. In this chapter, several hypotheses and one research question were posed in order to examine the influence of these factors on pre-interaction expectations and post-interaction evaluations. The chapter that follows contains a detailed description of the methods used to gather information and analyze data for the purpose of determining the validity of these hypotheses.
Participants

The participant pool consisted of employees from a large urban community college located in the Southwestern United States, and included teaching faculty and non-teaching administrative staff (N = 36). Fifty-five percent of the participants in the sample were employed in some IT support capacity, and included any personnel who provide computer technical support to end-users within the organization, either in-person or by phone (n = 20), while the remaining sample consisted members of the college staff who receive technical support including teaching faculty (n = 12) and support staff (n = 4). Fifty-five percent of the sample was male (n = 20), and over fifty percent were reportedly between the ages of 19 and 39 years old (n = 19). Sixty-four percent of the respondents identified themselves as white (n = 23), eleven percent identified themselves as Asian American (n = 1) or in the 'other' category (n = 3), and eight percent identified themselves as Hispanic (n = 3). Six participants did not provide a response to the age, gender, or ethnicity items.

Participants were also asked to report on their experience, skill, and usage with respect to computers (e.g. “How long have you worked with computers for work-related tasks or personal use?”; “What percent of your time is spent using your computer for job-related tasks?”; “How would you rate your computer troubleshooting skills?”). Fifty-
eight percent of participants indicated that they had over seven years experience using computers for either work-related tasks or personal use (n = 21). Over 69% reported that computer usage for job-related tasks took up over 40% of their time (n = 25), with 31% indicating that computer usage took over 80% of their time (n = 11). Fifty-six percent reported their computer troubleshooting skills as either good (n = 10) or very good (n = 10), with 17% reporting their troubleshooting skills as excellent (n = 6) and 11% reporting their troubleshooting skills as fair (n = 4). Six participants did not provide responses to the items regarding experience, skill, or usage.

Procedure

Research subjects received an email invitation to participate in an online survey. This was followed by an invitation sent via U.S. mail, and a second email invitation. The invitations provided a link to a web address and an access code. The access code reduced the possibility of random web surfers taking the survey but, more importantly, was used to identify the department in which the participant was employed in order to compare responses from micro-culture to micro-culture. Behavior and/or violation valance, which refers to the way behaviors (deviant or expected) are evaluated, was examined in order to determine to what extent, if any, evaluations varied from micro-culture to micro-culture within an organization. An important consideration for this study was the identification of responses from the IT support staff, the faculty, and administrative staff as distinct micro-cultures and the use of access codes to identify the participant’s department made this comparison possible. This intent was clearly stated on both the email invitation and the survey consent form. The invitation to participate in the study was distributed to four end-user micro-cultures: two academic departments (consisting primarily of teaching
faculty), and two non-academic departments (consisting primarily of administrative staff). An invitation to participate in the study was also extended to all members of the college's IT support staff, including any employees whose duties included direct computer technical support.

Once participants agreed to the terms of informed consent and provided their access code, they were permitted to complete the survey. While completing the survey, participants were permitted to leave the survey and return at a later time to finish. This was to allow for any technical difficulties that may have occurred while the participant was completing the survey (computer problems, internet/network outages, etc.). However, participants were not permitted to change any responses once they had submitted them, nor were they permitted to access their survey once it was complete.

As for the survey itself, participants first viewed a short video clip and responded to questions pertaining to stereotypes in terms of the video clip (participants who could not view the video clip for any reason automatically skipped these questions). Participants then responded to questions about expectation violations, communication competence, and demographic information. Although participants generally received the same questions, the survey was adaptive in terms of the way certain questions were worded depending on whether the participant was an end-user or a technician. Completion of the survey took between 15 and 25 minutes for most participants, depending on their internet connection speed.

Pilot Test

Part one of the survey began by having participants view an online video clip, a skit entitled "Nick Burns, Your Company Computer Guy" from the popular television show
Saturday Night Live. The video clip used in the survey was chosen after a pilot study using students enrolled in a graduate-level communication research methods course at a large southwestern university (N = 16). Pilot study participants were asked to view three popular video clips and respond to items of realism, frequency and stereotypes. All items were measured on 7-point Likert-type scales, however a typographical error omitted the number “6” (“1 – 2 – 3 – 4 – 5 – 7 – 8”). Participants were notified of this error and asked to replace “7” with “6,” and replace “8” with “7,” and the same was done when survey data were collected and analyzed.

The realism items (e.g., “How realistic do you think this interaction is?”; “Can you imagine that this interaction would actually occur?”) and frequency items (e.g., “How often has this type of interaction occurred in your own experience?”; “How frequently does this type of interaction occur in our own experience?”) were adapted from Bevan (2003) in order to determine how realistic the interactions portrayed in each video clip were and how often participants felt such interactions actually did occur. Two additional items measured the extent to which participants felt the video clips accurately portrayed stereotypes about technical (“geeks”) and non-technical (“end-users”) people (e.g., “This clip accurately portrays common stereotypes about geeks.”; “This video clip accurately portrays common stereotypes about non-technical people”). Results from a series of one sample t-tests revealed that the interactions portrayed in both clip “1” (t = 2.612, df = 15, p = .020) and clip “3” (t = 3.169, df = 15, p = .006) were significantly more realistic and frequent than in clip “2”. Clip “3” was significantly more stereotypical in terms of both technical people (t = 1.681, df = 15, p = .114) and non-technical people (t = 1.832, df = 15, p = .087) than clip “1”. In the interest of providing a portrayal of
technical people and non-technical people that was both realistic and not overtly stereotypical, clip “1” was chosen for use in the main survey.

**Measures**

*Stereotypes.* Traditional studies of stereotypes have often relied upon an adjective checklist-type measure, in which participants are provided with a number of adjectives and asked to select those items that are typical of the target group being assessed. This method was first used by Katz and Braly in 1933 and later by Gilbert (1951) and Karlins, Coffman, and Walters (1969), who comprise what is commonly referred to as the Princeton trilogy. It was refined by Devine and Elliot (1995), who argued that the original measure was not clear in its instructions, and was therefore confusing as to whether the data collected were measuring the participants’ knowledge of stereotypes or their personal beliefs. Devine and Elliot’s method of collecting information about both stereotypes and personal beliefs in order to compare the participant knowledge of the stereotype with their personal beliefs was adapted for this study. However, rather than being presented with a list of adjectives, participants viewed a video clip depicting stereotypes and respond to questions about stereotypes (e.g., “This clip accurately portrays common stereotypes about technicians”) and personal beliefs (e.g., “The portrayal of technicians in this clip is similar to my personal beliefs about technicians”) using a 7-point Likert-type scale (1 = “Strongly Agree”; 7 = “Strongly Disagree”). All items were recoded such that higher values indicate greater agreement with stereotypes and personal beliefs. In addition, participants were asked to indicate whether they had previously viewed the clip, the character “Nick Burns,” or any other portrayals of interactions between technical and non-technical people in popular media. Participants
were also asked to indicate which character(s) in the clip, if any, they most identified with in terms of their position in the organization.

*Expectation violations.* Part II of the survey examined expectations violations. Participants were first asked to reflect upon and briefly summarize any recent or memorable encounter (positive or negative) between themselves and an end-user (if the participant was IT staff) or a member of IT support staff (if the participant was an end-user), during which the other person did or said something that the participant did not expect. Participants were then asked to rate the degree to which the behavior was unexpected, the importance of the behavior, the behavior’s valance, and the extent to which the behavior changed the participant’s view of the other person (i.e., uncertainty). Three items measuring violation expectedness (e.g., “The behavior of the person described above was not at all expected”; “This person’s behavior surprised me a great deal”), two items measuring importance (e.g., “This person’s behavior was a very important relationship event”; “This person’s behavior was a major relational event”), two items measuring valence (e.g., “This person’s behavior was a very positive behavior”; “This person’s behavior was a behavior I liked a lot”), and four items measuring impact on uncertainty (e.g., “This person’s behavior made me feel a lot more confident in my predictions of his/her future behavior”; “This person’s behavior strongly increased my ability to accurately predict his/her future behavior”) were adapted from scales developed by Afifi and Metts (1998). All items were measured on 7-point Likert type scales (i.e., 1 = “Completely Expected”; 7 = “Completely Unexpected”) and were coded such that higher values indicate greater positive evaluations, more unexpectedness, and less uncertainty.
The violation expectedness items ($M = 3.98$, $SD = 1.52$) formed a reliable scale ($\alpha = .82$) and a composite item was created. Violation valance items ($M = 4.38$, $SD = 1.76$) formed a highly reliable scale ($\alpha = .92$) and a composite item was created. Removing one of the items measuring future uncertainty ("I'd like to see much more of such behavior from this person") resulted in a more reliable scale ($\alpha = .79$), so this was eliminated when creating the future uncertainty composite variable ($M = 4.59$, $SD = 1.21$).

Communication skills. Part III of the survey contained items adapted from Rubin's (1982) Communication Competency Assessment Instrument (CCAI). Participants were asked to rate communication skills based on the interaction that they described in the previous section. Items were measured on a 7-point Likert type scale (1 = "Strongly Disagree", 7 = "Strongly Agree") and were coded such that higher values indicate greater positive evaluations of communication skills. End-users (faculty/staff) were asked to rate the communication behavior of the IT support staff (technicians) described in the interaction. However, because this study is concerned with the communication skills of technical support staff, the questions given to IT support staff (technicians) were worded in such a way that the technicians would rate their own skills based on the self-described interaction. The CCAI was found to be a valid and reliable means for assessing observable communication skills ($\alpha = .79$), however, when modified to allow respondents to rate their own communication skills, Rubin found a low correlation between the observations made by others and self-report results (1985). As a result, Rubin concluded that speakers do not always perceive their own skills in the same way that others perceive them. In this study, the survey was anonymous, and as a result it was not possible to make direct comparisons between observed assessments and self-reports for individual
technicians, however responses from the end-users provided relevant data about observable skills. The thirteen communication skills items (M = 5.00, SD = .746) were reliable (α = .77) and a composite variable was created.

**Analysis Plan**

Hypotheses one and two, concerned with stereotype familiarity, violation expectedness, and violation valance, were tested with one-sample t-tests. A comparison was made between technicians and end-users who reported that they were familiar with stereotypes ("Have you viewed other portrayals of interactions between technical and non-technical people in film, television, or other popular media?"") with those who reported that they were not, in terms of both violation expectedness and violation valance. Hypothesis three, that focused on the relationship between violation valance and end-user future uncertainty, was tested using a one-tailed Pearson correlation. Research question one, examining the relationship between violation valance and technician future uncertainty, was tested using a two-tailed Pearson correlation. For hypothesis 4a and hypothesis 4b, both of which were focused on the relationship between communication skills, unexpected violations and violation valance, one-tailed Pearson correlations were again used. Due to the small sample size, a significance level of p < .10 was applied to all analyses. The following chapter provides results of these analyses.
CHAPTER 4

RESULTS

A total of 131 invitations to participate in the survey were sent to teaching faculty (n = 62), non-teaching administrative staff (n = 33), and information technology (IT) support staff (n = 36), yielding 36 completed surveys, for an overall return rate of 28% (see Table 1). Although surveys completed by IT support staff (n = 20) represented 56% of the IT staff invited to participate and provided a good representation of the IT staff of the organization, surveys completed by teaching faculty (n = 12) represented only 19% of the teaching faculty invited to participate and surveys completed by non-teaching administrative staff (n = 4) represented only 12% of the non-teaching administrative staff invited to participate. These relatively low numbers for teaching and non-teaching faculty do not provide enough data to make comparisons between some of the organization’s micro-cultures; however, combining the teaching and non-teaching staff into one larger end-user micro-culture (n = 16) provided a large enough sample to make comparisons between the end-user micro-culture and the IT support staff micro-culture.

The first hypothesis was based on the premise that whether or not a participant agreed with certain stereotypes about members of an out group, the fact that the participant is familiar with those stereotypes may have an influence on the extent to which certain behaviors are unexpected. Specifically, H1 predicted that those who are familiar with stereotypes differ from those who are not familiar with stereotypes in terms
TABLE 1:
Participants by Groups

<table>
<thead>
<tr>
<th>Participant Groups</th>
<th>Survey Invitations Sent</th>
<th>Responses Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Staff</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>English Faculty</td>
<td>49</td>
<td>7</td>
</tr>
<tr>
<td>Communication Faculty</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Student Services</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>131</td>
<td>36</td>
</tr>
</tbody>
</table>

of the degree to which an expectation violation is unexpected. Participants responded “yes” or “no” to the question of whether they had previously viewed similar portrayals of interactions between technical and non-technical people in film, television or other popular media, and this response determined what group they fell into: those who had previously viewed similar portrayals, and those who had not. Violation expectedness was compared between those who had previously viewed similar portrayals (M = 4.32, SD = 1.56) and those who reported they had not viewed similar portrayals (M = 3.50, SD = .66). Higher values indicated higher degrees of unexpectedness. The result of the analysis is that the computed t value (2.399) is greater than the critical value (2.086), with the one-tailed significance of .026 falling within the acceptable level of .10 in the comparison of familiarity with stereotypes and violation unexpectedness. Therefore, the null hypothesis was rejected and support was found for hypothesis one; there is significant difference between those who are familiar with stereotypes and those who are not in terms of the degree to which a violation is unexpected.

The second hypothesis was also concerned with familiarity with stereotypes, this time examining the relationship between familiarity with stereotypes and behavior valance.
Hypothesis 2 predicted that those who are familiar with stereotypes differ from those who are not familiar with stereotypes in terms of the degree to which an expectation violation is valanced. Violation valance was compared between those who had previously viewed similar portrayals (M = 3.74, SD = 1.69) and those who reported that they had not viewed similar portrayals (M = 5.17, SD = 1.13). Higher values indicated more positive valance. The result of the analysis indicated that the computed t value (3.884) was greater than the critical value (2.086), with the one-tailed significance of .001 falling within the acceptable level of .10 in the comparison of familiarity with stereotypes and violation valance. Therefore, the null hypothesis was rejected and support was found for hypothesis two; there is a significant difference between those who are familiar with stereotypes and those who are not in terms of the degree to which a violation is valanced.

Although these results both indicate support for H1 and H2, there is a significant difference in the findings of these results. The data supporting H1 would seem to indicate that expectation violations tended to be more unexpected among those who are familiar with stereotypes (M = 4.32, SD = 1.56), whereas the data supporting H2 indicates that the same population (those who are familiar with stereotypes), while finding expectation violations more unexpected, do not place high valance on those violations (M = 3.74, SD = 1.69). Pearson bivariate comparisons between the two results confirmed a significant negative relationship between violation unexpectedness and violation valance among those who are familiar with stereotypes (r = -.470, p = .031).

The third hypothesis predicted that positively valanced expectation violations committed by technicians are negatively related to future uncertainty for end-users. In addition, a similar comparison was proposed between positively valanced expectation...
violations committed by end-users and future uncertainty for technicians (RQ1). The relationship between the violation valance composite variable and the future uncertainty composite variable was significant for end-users ($r = .813, p < .001$), however it was not significant for technicians ($r = .266, p = .338$). Therefore, although the results supported H3’s prediction that positively valanced expectation violations committed by technicians would be related to decreased end-user uncertainty, the data did not show a significant relationship between expectation violation valance by end-users and future uncertainty for technicians (RQ1).

The fourth hypotheses (H4a and H4b) were focused on the relationship between communication skills, violation unexpectedness and violation valance; H4a predicted that end-user ratings of technician communication skills would be positively correlated to the degree to which the technician’s behavior was unexpected; and H4b predicted that end-user ratings of technician communication skills would be positively correlated to the degree to which the technician’s behavior was positively valanced. The relationship between the communication skills composite variable and the violation unexpectedness variable was not significant ($r = -.103, p = .363$); however, the relationship between the communication skills composite variable and the violation valance variable was significant ($r = .644, p < .01$). Therefore, although the data were not consistent with the notion that end-user ratings of technician communication skills would be positively correlated to the degree to which technician behavior is unexpected (H4a), the data do show support for the prediction that end-user ratings of technician communication skills would be positively correlated to the degree to which the technician’s behavior is a positively valanced expectation violation (H4b).
In sum, this study found support for the prediction that there is a significant difference between those who are familiar with stereotypes and those who are not in terms of the degree to which a violation is unexpected and the degree to which the violation is positively valanced, although there is a significant negative relationship between violation unexpectedness and violation valance among those familiar with stereotypes. Support was also found for the prediction that positively valanced expectation violations committed by technicians would be related to decreased end-user uncertainty. Finally, this study found support for the prediction that end-user ratings of technician communication skills would be positively correlated to the degree to which technician behavior is a positively valanced expectation violation. A further discussion of these results will be presented in the following chapter.
CHAPTER 5

CONCLUSION

Summary

With the proliferation of advice to IT support professionals recommending that they focus on communication skills in order to improve interactions with end-users, the goal of this study was to determine whether the demonstration of good communication skills was the primary factor influencing interactions between IT support staff and end-users, or whether there were other equally influential factors that should be considered. This study was particularly interested in examining the influence factors such as stereotypes, expectations, and communication skills on communication interactions between information technology (IT) support professionals and the computer users (end-users) for whom they provide support. Chapter 2 provided an overview of studies that examined help-seeking relationships. Although there are no studies that specifically focus on help-seeking between IT support staff and end-users, similar help-seeking relationships were examined, revealing the negative influence that stereotypes and attitudes may play in those communication interactions. Next, a discussion of the Expectation Violation Theory framework, along with important elements of the framework such as stereotypes, behavior valance, and the impact of expectation violations on future uncertainty, lead to the development of several hypotheses and one research question. Chapter 3 described the method used by this study to collect data including a description of the population.
sampled, the procedure used to collect data, the pilot study used in the development of the final survey instrument (along with the measures used in the survey) and the data analysis plan. Chapter 4 provided results of the survey, providing an analysis of the data collected and an overview of the results found.

Although good communication skills are important, they are not the only factors influencing end-user expectations and evaluations of interactions with IT staff. Although technicians who demonstrate good communication skills are certainly valued by end-users, stereotypes may also play a significant role in terms of both end-user expectations and behavior valance. Because expectation violations by technicians that are positively valanced by end-users may decrease end-user uncertainty toward future encounters with other technicians, it is important to consider the important role that stereotypes play in influencing those expectations.

Observations

First, support was found for H1, that predicted that familiarity with stereotypes does in fact have an impact on the degree to which behavior is unexpected. This support is evident when viewing the results of violation expectedness for all participants compared to those who had previously viewed stereotype-based portrayals. However, it is perhaps even more relevant in light of responses that indicate that among those participants who had previously viewed stereotype-based portrayals, most tended to disagree with the statement “The portrayal of technicians in this clip is similar to my personal beliefs about technicians” (N = 23, M = 2.22, SD = 1.48). This adds to the position that stereotype-based expectancies have an effect on speaker evaluations by demonstrating that even when participants do not align their personal beliefs to common stereotypes, the mere
familiarity with stereotypes may play a role in defining just what type of behavior participants expect when actually receiving help from technicians.

Support was also found for H2, that posited that just as familiarity with stereotypes has an impact on the degree to which behavior is unexpected, so too does familiarity with stereotypes impact the degree to which an unexpected behavior is valanced. Specifically, data supported the position that there is a significant difference between those who are familiar with stereotypes and those who are not in terms of the degree to which a violation is valanced. Because of the significance that valance has on interaction outcomes, with positively valanced violations producing more favorable interactions than will behaviors that conform to expectations, and negatively valanced violations resulting in more unfavorable interactions than when behavior conforms to expectations (Burgoon, 1995), this finding is significant. Moreover, support was found for both H1 and H2, indicating that with familiarity of stereotypes comes a tendency for end-users to both not expect violations and not value those violations when they do occur. The influence of stereotypes may be of great interest for organizations attempting to motivate their technicians to improve their soft skills. For such instances, motivating technicians may be as straightforward as raising awareness among technicians that end-users—the customer for IT support staff—do not, in fact, expect to see “Nick Burns” or any other amalgamation of the stereotypical “geek” showing up at their office door. Rather, being a “geek” is no excuse for acting like one as far as end-users—who neither anticipate such behavior nor value it when it happens—are concerned.

Technicians should also understand the power of positively valanced violations on reducing end-user uncertainty. Support was shown for H3, which predicted that
violations by technicians that are positively valanced by end-users tend to decrease end-user uncertainty with respect to future encounters with technicians. Given a scenario where end-users have little more than stereotypes upon which to base their expectations (particularly if they are unfamiliar with technicians as a group), technicians could be doing themselves—and their colleagues—a favor by committing positively valanced violations. As such, this study has found that end-user evaluations of interactions with technicians are not solely dependent on the extent to which technicians violate (or do not violate) the end-user's stereotype influenced expectations; however the valance of such a violation—positive or negative—does play a role. And this is an area where good communication skills may fit in.

Hypotheses 4a and 4b were concerned with the relationship between technician communication skills and the degree to which those skills were unexpected and valanced by end-users. Research findings did not support H4a, that end-user ratings of technician communication skills will be positively correlated to the degree to which the technician's behavior is unexpected. However, this study did find support for H4b, that end-user ratings of technician communication skills will be positively correlated to the degree to which the technician's behavior is valanced. Keeping in mind the notion that positively valanced behaviors reduce future uncertainty, it is likely that technicians should develop their communication skills, as doing so could achieve two positive results: first, good communication skills should be positively valanced by end-users and second, those positively valanced behaviors should help to reduce uncertainty for end-users about future interactions with technicians. Thus, although communication skills are not the single most important factor in interactions between end-users and technicians, they...
certainly play a role, along with stereotypes and expectations, in influencing end-user evaluations.

This study sought to broaden the framework of Expectation Violation Theory (EVT) by applying elements of the theory toward verbal encounters rather than the nonverbal interpersonal encounters traditionally examined with the theory. In the current study, the interactions that were examined between IT support staff and end-users were both verbal and nonverbal and primarily face-to-face. With respect to expectation violation valance, the study found support for the position that, as with nonverbal interpersonal encounters, positively valanced expectation violations in verbal encounters between IT support staff and end-users yield positive results for future expectations by decreasing uncertainty. This study also extended the scope of the EVT framework by applying concepts from the theory that are traditionally used to examine intercultural communication to organizational micro-cultures. In this respect, support was found for the view that, as in intercultural interactions, the expectations of members of organizational micro-cultures are indeed influenced by stereotypes among those who are familiar with stereotypes, even if the perceiver's own personal beliefs do not align with such stereotypes. Although the data collected in this study does not make it possible to determine if stereotype-based expectations are generally negative, the findings may actually suggest the contrary. Those who were familiar with stereotypes may have formed positive or "high" expectations which, as a result, lead participants to evaluate expectation violations more negatively. This would run counter to the position that stereotype-based expectations are generally negative.
The relatively low response from end-users in different departments made it impossible to make comparisons between end-user micro-cultures. However within the organization, end-users and IT support staff as separate groups certainly possess intercultural characteristics (common jargon, mutual beliefs and attitudes among co-workers) that arguably make this study a relevant examination of organizational intercultural communication. In this sense, applying EVT to this setting broadened the scope of EVT in terms of both in organizational micro-cultures and organizations in general. Finally, using items from the Afifi and Metts (1998) scale measuring expectation violation expectedness, importance, valance and impact on future uncertainty provided an opportunity to further validate a relevant scale in the study of EVT.

Recommendations for Future Research

There is certainly no sign of a decrease in the need for technical support for a workforce growing more dependent on technology to do its work. With a growing population of technical support professionals, future research examining communication interactions between technical and non-technical personnel is both justified and needed. For the current study, the primary challenge was the relatively low number of responses from the organization’s end-users compared to the number of responses from the organization’s IT support staff. Because the survey instrument itself was a web-based instrument, cursory knowledge of computers was required in order to take the survey. An online interface may simply have been more comfortable and/or familiar for IT support staff than for end-users, resulting in a disproportionate number of IT support staff responses compared to end-user responses. So although an online survey seemed to be a
natural fit given the nature of the study, future research may want to take into account this difficulty when determining a survey delivery method.

Another consideration is the challenge of studying a single organization. This approach was taken in hope of making comparisons between different organizational micro-cultures; the low response rate made this impossible. Future research may wish to consider a larger organization, or perhaps adjust the focus of the study to include IT support staff who provide support for external customers of an organization (such as consumers who purchase software from a company).

The finding that both familiarity with stereotypes and good communication skills have an influence on behavior valance is important, however it may be even more beneficial for future research to determine which of these factors is more influential. Another factor that may be included in such research is motivation, not just of technical support staff, but of end-users as well, given the important role that motivation plays in determining the way that expectancy-confirming and expectancy-disconfirming information is processed. Finally, it may be beneficial to place such a study in an experimental environment, in order to ensure that each factor (stereotypes, communication skills, motivation) is examined for their positive and negative aspects. An experimental environment would also provide the opportunity to analyze actual interactions, rather the relying solely on participants to report on their perceptions of an interaction.
Invitation to participate in research study

Greetings:

My name is Kim Price, and I am a graduate student at the University of Nevada Las Vegas Hank Greenspun School of Communication.

I am sending you this email to extend an invitation to you to participate in my research study. The purpose of this study is to examine communication between computer technicians and computer users within an organization. You are invited to participate in this study for two reasons: one, because you are a member of a department within a larger organization; and two, because the larger organization specifically employs staff whose purpose is to provide computer support for members of the organization.

The survey, which includes a short (5 minute) video plus a few questions, should only take 10 minutes of your time.

If you have a moment, please open Internet Explorer (sorry, the survey won't work in Netscape). Type in:

www.acityofdestiny.com

Do not click on links in your email, it is better if you start Internet Explorer and type in the address.

Once at the survey, you will need to provide the following access code:

orange

This access code corresponds to your department only, so that results may be compared between different organizational departments.

If you have any questions, please feel free to email me.

Thank you,
Kim Price
K_Price@cox.net
Title of Study: How Organizational Subcultures, Stereotypes and Expectation Violations Influence Communication between End Users and Information Technology Support Staff (working title)

Investigator: Kim Price, Graduate Student, Greenspun College of Urban Affairs Department of Communication.

Protocol Number: OPRS# 0404 - 1220

Purpose of the Study: You are invited to participate in a research study. The purpose of this study is to examine communication between technicians and computer users within an organization.

Participants: You are being asked to participate in this study for two reasons. One, because you are a member of a department within a larger organization. Two, because the larger organization specifically employs staff whose purpose is to provide computer support to employees throughout the organization.

Procedures: If you volunteer to participate in this study, you will be asked to enter the access code that was sent to you in your e-mail. This code will allow you to access the survey. When you begin the survey, a random number will be generated and appended to your access code (code9999, code7654, etc.). The access code itself will be used to identify your department, in order to compare responses from various organizational departments. Please note, however, that the numeric portion of the survey number is randomly generated at the moment the survey begins, and in no way may be used to identify individual participants.

Benefits of Participation: There may be no direct benefits to you as a participant in this study. However, we hope to increase understanding about the factors that influence communication expectations, in order to promote positive communication interactions.

Cost/Compensation: There will be no financial cost to you to participate in this study. The study will take 15-25 minutes of your time (depending on your connection speed). You will not be compensated for your time. The University of Nevada, Las Vegas may not provide compensation or free medical care for an unanticipated injury sustained as a result of participating in this research study.

Contact Information: If you have any questions or concerns about the study, you may contact Dr. Thomas Burkholder at 895-4376. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study
is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 895-2794.

Voluntary Participations: Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without penalty. You are encouraged to ask questions about this study at any time during the research study.

Confidentiality: All information gathered in this study will be kept completely confidential. No reference will be made in written or oral statements that could link any participant to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study. After the storage time the information gathered will be destroyed.

Participant Consent:
I have read the above information and agree to participate in this study.

_____ I do not agree  _____ I agree

I am:
_____ 18 years old  _____ At least 18 years of age

Communication Skills Evaluation

This purpose of this study is to discover the value that is placed on communication skills by both faculty/staff and technicians during technical support-related communication interactions. This survey will take between 15 and 25 minutes to complete (depending on your connection speed).

Your survey number will be comprised of your access code followed by four randomly-generated numbers. The access code will be used to identify particular organizational groups in order to compare responses across various organizational cultures. Please note, however, that the numeric portion of the survey code is randomly generated at the time the survey begins, and in no way may be used to identify individual participants.

Please make note of your survey number in case it is necessary for you to complete your survey at a later time.

If you are starting a new survey, please enter the access code that was sent in to you in your email, to begin the survey:

Access Code: [ ]

If you have already begun your survey, please enter your survey number:

Survey Number: [ ]

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Please view the following video clip. Questions from Part 1 of this survey will be based on your reaction to this clip. Please be advised that if you have a slower internet connection (Dial-Up, for example) it may take a few minutes for the video to begin. If your problems persist, you may continue the survey without viewing the clip by choosing "I could not view the clip" from the menu below.

_____ I have viewed the clip  _____ I could not view the clip

Part 1: Stereotypes
Please answer the following questions based on your reaction to the video clip:

Have you ever viewed this particular video clip before this survey?
_____ Yes  _____ No

Have you ever viewed this particular character (Nick Burns) before this survey?
_____ Yes  _____ No

Have you viewed other portrayals of interactions between technical and non-technical people in film, television or other popular media?
_____ Yes  _____ No

Which character(s), if any, do you more closely identify with in terms of your position in your organization?
_____ Nick Burns  _____ End Users  _____ Neither

This clip accurately portrays common stereotypes about technicians
Strongly Disagree  7  6  5  4  3  2  1  Strongly Agree

This clip accurately portrays common stereotypes about end users.
Strongly Disagree  7  6  5  4  3  2  1  Strongly Agree

The portrayal of technicians in this clip is similar to my personal beliefs about technicians.
Strongly Disagree  7  6  5  4  3  2  1  Strongly Agree

The portrayal of end users in this clip is similar to my personal beliefs about end users.
Strongly Disagree  7  6  5  4  3  2  1  Strongly Agree

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Part 2: Expectations
Please take a moment and think back to any recent or memorable encounter between yourself and a member of your organization’s technical support staff (either in-person or on the phone) where, in the process of providing support, the technical support staff person did or said something that you did not expect.

Please describe (please refrain from using actual names):

The behavior of the person described above was:
Not At All Expected 7 6 5 4 3 2 1 Completely Expected

This person’s behavior was a ________________ relationship event.
Very Unimportant 7 6 5 4 3 2 1 Very Important

This person’s behavior was a ________________ behavior:
Very Positive 7 6 5 4 3 2 1 Very Negative

This person’s behavior surprised me:
A Great Deal 7 6 5 4 3 2 1 Only Very Slightly

This person’s behavior was a:
Major Relational Event 7 6 5 4 3 2 1 Minor Relational Event

This person’s behavior was a behavior:
I Liked A Lot 7 6 5 4 3 2 1 I Did Not Like at All

This person’s behavior was:
Very Slightly Unexpected 7 6 5 4 3 2 1 Completely Unexpected

This person’s behavior made me feel ____________ confident in my predictions of his/her future behavior:
A Lot More 7 6 5 4 3 2 1 A Lot Less

This person’s behavior ________________my ability to accurately predict his/her future behavior:
Strongly Increased 7 6 5 4 3 2 1 Strongly Decreased

I’d ______________ such behavior from this person:
Like to see 7 6 5 4 3 2 1 Rather never again
much more of experience

This person’s behavior ________________my ability to accurately predict the future behavior of other technicians:
Strongly Increased 7 6 5 4 3 2 1 Strongly Decreased
### Part 3B: Communication Skills

Please respond to the following items in terms of the technician's communication skills during the conversation you described in the previous section (as shown below):

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Agree</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The technician mispronounced a lot of words.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The words the technician used said one thing while his/her face and tone of voice said something else.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician spoke clearly and distinctly.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician could be persuasive when he/she wanted to be.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician's ideas were clearly and concisely presented.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician thoroughly expressed his/her position.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician could recognize misunderstanding.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician had to ask questions several times, in several ways, to get the information he/she wanted.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician had to answer question(s) several times before I was satisfied with the answer(s).</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>When the technician explained information to me, it tended to be disorganized.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>When the technician gave directions to me, the directions were accurate.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>When the technician tried to describe my point of view, he/she had trouble getting it right.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>The technician was able to give a balanced explanation of differing opinions.</td>
<td></td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

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General Information

How long have you worked with computers for work-related tasks or personal use?
Less than 1 Year  1-2 Years  3-5 Years  5-7 Years  Greater than 7 Years

What percent of your time is spent using your computer for job-related tasks?
More than 80%  60-80%  40-60%  20-40%  Less than 20%

How would you rate your computer troubleshooting skills?
Excellent  Very Good  Good  Fair  Poor

What is your gender?
Male  Female

How old are you? (in years)
18-29  30-39  40-49  50-59  60 and Above

With which ethnic background or race do you most closely identify?
Asian  Black/African American  Hispanic  Native American

White  Other
APPENDIX II

HUMAN SUBJECTS PROTOCOL
Social/Behavioral IRB - Expedited Review Approval Notice

DATE: May 6, 2004

TO: Dr. Jennifer Bevan
    School of Communication (109)

FROM: Dr. Paul Jones, Chair
      UNLV Social/Behavioral Sciences Institutional Review Board
      via the Office for the Protection of Research Subjects

RE: Protocol Title: Can You Help Me? How Organizational Subcultures, Stereotypes and Expectations Violations Influence Communication Between End Users and Information Technology Support Staff OPRS# 0404 - 1220

This memorandum is notification that the protocol for the project referenced above has met the criteria for exemption from full committee review by the UNLV Social/Behavioral Institutional Review Board (IRB) as indicated in regulatory statues 45CFR 46.110. The protocol has been submitted through the expedited review process and has been approved.

The protocol is approved for a period of one year from the date of IRB review. Work on the project may proceed as soon as you receive written notification from OPRS.

Should the use of human subjects described in this protocol continue beyond May 3, 2005, it would be necessary to request an extension 30 days before the expiration date. Should there be any change(s) to the protocol, it will be necessary to request such change in writing through the Office for the Protection of Research Subjects.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at OPRSHumanSubjects@ccmail.nevada.edu or call 895-2794.
BIBLIOGRAPHY


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*Journal of Adolescent Research* 17.5, 509-531.


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Thesis Title: An Examination of Interactions between Computer Support Staff and End Users

Thesis Examination Committee:
Chairperson, Dr. Thomas Burkholder, Ph. D.
Committee Member, Dr. Jennifer Bevan, Ph. D.
Committee Member, Dr. Dolores Tanno, Ph. D.
Graduate Faculty Representative, Dr. Lori Temple, Ph. D.