

GENDER, STATUS, AND LEGITIMACY:
HOW HUMOR IS STRUCTURED WITHIN INTERACTION

by

LAURA AIKENS

(Under the Direction of Dawn T. Robinson)

ABSTRACT

While many behaviors have been tied to status processes, humor has largely been ignored despite its overwhelming presence within interaction. Humor is theoretically relevant to group dynamics as it may be conditioned by and/or a way of negotiating status structures. The goal of this project is to further develop a sociological theory of humor. This goal is pursued on two fronts, both theoretically and methodologically. Theoretically, this paper extends Robinson and Smith-Lovin (2001) by exploring how characteristics about individuals and groups effect humor usage. Results indicate that humor attempts, successes, and the type of humor used are related to individual-level and group-level characteristics. Methodologically, this paper investigates the implications of analytic choice by comparing results obtained through event history and hierarchical linear modeling techniques. Results of the methodological comparison revealed substantial overlap between the analyses. Overall, this research emphasizes how micro-level interactional processes can be conditioned by macro-level structures.

INDEX WORDS: Humor, Gender, Status, Status Characteristics Theory, Event History Analysis, Hierarchical Linear Modeling

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LAURA AIKENS

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LAURA AIKENS

Major Professor:	Dawn T. Robinson
Committee:	Jody Clay-Warner Thomas L. McNulty

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
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TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
LIST OF FIGURES	viii
CHAPTER	
1 INTRODUCTION	1
2 BACKGROUND	5
Humor	5
Social Functions of Humor	6
Gender and Humor	7
Status and Humor	10
Gender and Status in Conversational Interaction	12
3 THEORY AND HYPOTHESES	18
Impact of Individual Characteristics on Humor	18
Impact of Group Characteristics on Humor	19
Hypotheses	27
4 METHODS	34
Design	34
Dependent Measures	35
Control Variables	38
Analytic Strategy: Event History Analysis	38

	Analytic Strategy: Hierarchical Linear Modeling	40
5	COMPARING HUMOR CODING SCHEMES	43
	Descriptive Statistics	43
	Replicating Robinson and Smith-Lovin (2001)	45
	Choosing a Coding Scheme	48
6	RESULTS	55
	Hypothesis Testing: Event History Analysis.....	55
	Hypothesis Testing: Hierarchical Linear Modeling	59
7	SUBSTANTIVE DISCUSSION.....	75
8	METHODOLOGICAL COMPARISON.....	83
	REFERENCES	90

LIST OF TABLES

	Page
Table 5.1: Person-Level Means for Dependent Variables Across Types of Individuals and Groups	50
Table 5.2: Results of an Event History Analysis Replicating Robinson and Smith-Lovin (2001): The Effects of Timing and Group and Speaker Characteristics on the Wait Time for Humor in Small Task Group Conversations	51
Table 5.3: Results of an Event History Analysis: The Effects of Number of Women on the Wait Time for Humor in Small Task Group Conversations	52
Table 5.4: Results of an Event History Analysis Comparing the Effects of Individual and Group Characteristics on the Wait Time Until Humor Attempts, Successes, and Failures Across Coding Schemes	54
Table 6.1: Hypothesis Testing: Using Event History Analysis to Test the Effects of Individual and Group Characteristics on the Wait Time Until RSL Humor Attempts and Successes in Small Group Conversations	67
Table 6.2: Hypothesis Testing: Using Event History Analysis to Test the Effects Individual and Group Characteristics on the Wait Time Until Various Types of Humor in Small Group Conversations	68
Table 6.3: HGLM Poisson Regression of Humor Attempts and Successes on Various Person-level and Group-level Characteristics	70

Table 6.4: HGLM Poisson Regression of Humor Success Rate on Various Person-level and Group-level Characteristics	71
Table 6.5: HGLM Poisson Regression of Humor Type on Various Person-level and Group-level Characteristics	72
Table 6.6: HGLM Poisson Regression of Rate of Humor Type on Various Person-level and Group-level Characteristics	73

LIST OF FIGURES

	Page
Figure 3.1: Groups by Legitimacy, Supervisor's Gender, and Assistants' Gender	32
Figure 3.2: Groups Ordered According to the Slope of the Status Hierarchy	33
Figure 4.1: Comparing Aikens' and Robinson and Smith-Lovin's Coding Schemes	42
Figure 5.1: Testing Model Fit for RSL Humor Attempts	53
Figure 5.2: Testing Model Fit for Aikens Humor Attempts	53
Figure 6.1: Summary of Hypotheses and Event History Findings	69
Figure 6.2: Summary of Hypotheses and HLM Findings	74
Figure 8.1: Comparing the Results from Event History and HLM Analyses	88

CHAPTER 1

INTRODUCTION

To date, there has been one attempt to view humor through the lens of the group process tradition in sociological social psychology. The current research project follows in line with Robinson and Smith-Lovin (2001) in developing a theory of humor within group interaction. Compared to other perspectives on humor, a sociological perspective emphasizes the importance of structural forces on conversational interaction. In this paper, this emphasis occurs both theoretically and methodologically. Theoretically, this paper extends Robinson and Smith-Lovin's theory of humor to incorporate aspects of groups in addition to individual characteristics. Specifically, I investigate how the overall clarity of the status structure affects how humor is used. Methodologically, this paper will contrast two types of statistical analysis. Event history analysis, the method used by Robinson and Smith-Lovin, accounts for the effects of temporal ordering at the expense of the independence assumption. Hierarchical linear modeling is a technique that accounts for the lack of independence between cases, but at the expense of subtle temporal information. I employ both methods and contrast the results to see if and how methodological choice can affect empirical findings. Overall, the goals of this paper stem from an interest in how global structures can affect the micro-level process of humor. This paper will depart from previous theories of humor in several ways.

Previous attempts at a theory of humor focus on psychological predispositions and individual traits such as gender, thereby conceptualizing humor as an intrinsic property of individuals. A sociological theory of humor must depart from previous research trajectories in

three important ways. First, most research on humor has focused on appreciation and not humor production (Crawford 1989) . Within this already limited perspective, humor appreciation has been defined narrowly as responses (both cognitive and behavioral) to stimuli such as jokes and comic strips. This simplistic stimulus/response model ignores the *processural* nature of humor (Fine 1983). Additionally, this definition of humor as formulaic utterances consisting of punch lines and comedic timing ignores contextualized instances of humor that are more common within face-to-face interaction. Therefore, a sociological theory of humor should emphasize both halves of humor (i.e. production and appreciation) and broaden the definition to include both formulaic and contextual instances of humor.

Second, a theory of humor needs to address its underlying causal mechanisms. Currently, many studies on humor rely on naturalistic observation and survey research. While this type of research is ultimately necessary to construct an all encompassing theory of humor, it is not necessarily the best place to start. Naturalistic observation is problematic because gender and status are often confounded in natural settings and it becomes impossible to understand the effects of one apart from the other. Survey studies are also problematic because they often rely on perceptions of humor use. Within these designs, it is impossible determine whether gender and/or status affect humor use, or whether individuals' gender/status affects others' perceptions of humor. For example, it is possible that men use humor more than women, but it is unclear if there are actual behavioral differences between men and women, or if individuals perceive men to produce more humor because it fulfills their expectations of how men *should* behave. In other words, previous methods such as naturalistic observation and surveys do not allow casual inferences to be made.

Third, the unit of analysis with regard to humor has typically been at the level of the individual. Studies investigate which types of individuals are likely to respond favorably to particular types of stimuli, or what kinds of people are likely to use humor within an interaction. A truly sociological theory of humor must also account for the impact of the group structure on humor use. Despite the obvious reasons for focusing on the individual, there are many reasons to step back to the group level. Humor does not really exist outside of interpersonal interaction (Fine 1983; Robinson and Smith-Lovin 2001). For humor to exist there must be a ‘performer’ and an ‘audience’. So although individuals are the ones to utilize humor, whether or not they do so and the reactions such humor engenders are greatly affected by group-level characteristics. For instance, it is easy to imagine that a man is more likely to tell a sexist joke to a group of men than to a group of women. If he so dares to tell the joke in mixed company, it is easy to imagine that women and men may respond differently to the same joke. Therefore, whether or not the joke is well/ill-received is not solely a function of the content of the joke or the comedic timing of the utterance. In sum, humor is not always objectively definable. Instead, humor is often contextualized by the environment and surrounding structure. Since humor is often purported to either reinforce/support or challenge/negotiate the group structure, it is important focus on group-level characteristics that may either impede or encourage humor use.

To alleviate these issues and work toward a sociological and structural theory of humor, the current study focuses on both production of and reactions to humor. This more permissive definition will allow for a general understanding of how all types of humor operate within interaction. Additionally, this study employs experimental methods to manipulate formal status, gender of the group leader, and gender composition of the group. While Robinson and Smith-Lovin also used experimental techniques, the current design will allow for a more careful

analysis of how gender and status operate separately. Although artificial in nature, this design will avoid pitfalls found in alternative methods with regard to causal ordering. Finally, this research toggles the level of analysis between individuals and groups both theoretically and methodologically. The remainder of the paper is as follows. I will first summarize the literature on humor and how it has previously been linked to gender and status. Next, I will rely on the previous group process theory of humor and status, and extend it with a structural component. From this theory I generate predictions about how individual and group characteristics affect humor use. Next I explore two related by distinct coding schemes in an effort to replicate and better understand the findings presented in Robinson and Smith-Lovin (2001). Finally I employ two statistical techniques to answer the research questions. Ultimately, the goal of this research project is two-pronged. First, there are substantive goals aimed at investigating and understanding humor as a status process. Second, there are methodological goals aimed at investigating and understanding how using two analytic strategies with different underlying assumptions alters the results.

CHAPTER 2

BACKGROUND

Humor

Humor has been defined as that which playfully pokes for the sole purpose of amusement (Gruner 1996). Despite the fact that humor is associated with individuals (e.g. “He’s so funny” or “She has a great sense of humor”), it may also be conceptualized at the unit of interaction (Couch 1992; Fine 1983; Robinson and Smith-Lovin 2001). For a behavior or utterance to be humorous, it must have an actor, performer, joke teller, etc., as well as an audience. In other words, while individuals act in humorous ways, such actions cannot be deemed humorous without the approval of an audience (Fine 1983). Humor is inherently an interpersonal phenomenon, and not a property of individuals or the words individuals are saying. Therefore, when studying humor through a sociological lens, it is important to pay attention to structural characteristics of groups that have already been shown to affect many behaviors within interaction (Berger 1972; Berger and Webster 2006; Ridgeway and Correll 2004).

Humor appears across all types of actor/audience relationships. Sometimes the speaker is an actual performer invoking humor as a career (i.e. stand-up comic). More commonly, however, humor happens between friends, family, acquaintances, or coworkers within the context of daily interactions. Within these relationships, the intent of humor varies. At one end of the spectrum, humor can be planned and intentional in the form of jokes recited on stage, or around the office water cooler. At the other end of the spectrum, humor can arise without intent. For example, passing gas in a large lecture hall during the unbreakable silence of an exam is bound to result in a few chuckles despite no intention on the part of the ‘actor.’ The current

research is only interested in intentional humor where the actor tries to ‘get a laugh’ out of the audience. The actor may or may not be successful, but intent is important for the purpose of this study. It is important to recognize that the current operating definition of intentional humor extends beyond canned or rehearsed joking.

This cursory discussion of humor has introduced some relevant issues to the current research. First, humor cannot necessarily be identified by the words/actions themselves. Second, humor can be intentional or unintentional. Third, humor can take many forms (jokes, anecdotes, etc.). For the purposes of this research project, humor is defined as a type of verbal communication with the intent to amuse. This broad definition will account for the contextual nature of humor and avoid pitfalls associated with narrow definitions which are discussed later in further detail.

Social Functions of Humor

One thread in the humor literature debates the social functions humor. The following taxonomies are non-exhaustive representations of the functions of humor. Kahn (1989) delineates five functions for humor in interaction. First, humor helps us to cope with difficult circumstances. Second, humor allows us to recast familiar things in a new light. Third, humor allows us to communicate messages indirectly. Fourth, humor allows us to express hostility. Fifth, humor allows us to construct identities and affords individuals an opportunity to identify with each other and the group as a whole.

The above taxonomy could be condensed into the following two categories: that which facilitates, and that which subverts (Graham, Papa, and Brooks 1992). Facilitative humor acts to ‘break the ice,’ smooth interaction, attract others’ attention, and generate a feeling of belonging.

Conversely, subversive humor is that which alters conversational rules, enables coalition formation, and conveys verbally aggressive messages.

Collinson (2002) recasts these functions of humor by aligning them with two sociological paradigms. According to Collinson (2002), a *functionalist* perspective on humor emphasizes the tension reducing and cohesive properties of humor. A *conflict* perspective on humor emphasizes the ways in which humor can be used to establish and reinforce power differentials. This way of conceptualizing humor is particularly useful for the current research. What kinds of group structures are conducive to hierarchy negotiating types of humor (*conflict*) versus humor that emphasizes commonality and group belonging (*functional*)? Robinson and Smith-Lovin (2001) use the term ‘cohesive’ humor for humor what Collinson refers to as functional humor, and ‘differentiating’ humor for what Collinson calls conflict humor. For consistency sake, I will utilize the same terminology as that used by Robinson and Smith-Lovin.

Humorous events are worth studying because they may convey information that otherwise remains unexpressed in a more obvious way. Many types of behavior are altered in group interactions as a result of the status structure (Berger 1972; Berger and Webster 2006; Ridgeway 1988; Ridgeway and Berger 1986). Humor (especially subversive and differentiating types) may reflect attempts to create or redefine structures. Additionally, other types of humor may provide a way support/endorse the current status structure. For these reasons, it is important to study and understand humor as both a status-reflecting and status-organizing process.

Gender and Humor

Within modern American culture, there is a prominent stereotype that women are incapable of producing and/or appreciating humor. This stereotype is captured by Christopher Hitchens’ recent editorial piece in Vanity Fair entitled “Why Women Aren’t Funny,” as well as

other representations of women and comedy (Hitchens 2007). One study found that women are far less likely than men to have the starring role in comedic television shows (Davis 1990). Comedy Central recently aired a program that profiled the top 100 comedians of all time (2004). Rosanne Barr and Ellen Degeneres were the only two women to make it into the top twenty and only seven other women made it onto the list at all. Within the context of popular culture, women are depicted as less funny than men. Recently, researchers across the fields of psychology, communication, and sociology have investigated the relationship between gender and humor.

From this line of research, numerous studies have found that men and women differ in what they find funny (Brodzinsky, Barnett, and Aiello 1981; Crawford 1989; Crawford 1992; Crawford 1995; Crawford and Gressley 1991; Marlowe 1989; Mundorf, Bhatia, Zillmann, Lester, and Robertson 1988). Their overall findings indicate that men respond more favorably than women to various types of humorous stimuli. These findings have been replicated numerous times; men are more likely than women to rate humorous stimuli as funny. This finding has morphed into: men have a better sense of humor than women. This conclusion, however, does not sit well with Feminist scholars who argue that the aforementioned findings merely reflect bias that is built into every step of the research process (Crawford 1989).

Mary Crawford (1989; 1992; 1995; 2003) is unconvinced by researchers' conclusion that women have less of a sense of humor than men. She points out several flaws in these studies' designs. First, rating the funniness of a joke only looks at one half of the humor coin: appreciation. She argues that these studies do not attempt to look at humor production, which is at least equally as important as humor appreciation in assessing one's sense of humor.

Second and somewhat related to the first critique, Crawford argues that by studying humor as a stimulus-response process, it has become essentialized into a dispositional trait. In other words, humor is identified as a trait of an individual. Within this perspective, there is no acknowledgement of the environmental influences and group structures on the dynamics of an interaction. Because humor requires at least two parties, some researchers have suggested that the focus needs to return to the interactional and contextual aspects of humor (Fine 1983; Robinson and Smith-Lovin 2001). Comic strips and jokes represent only a sliver of all that is humorous. These sorts of humorous events are relatively rare in actual conversation and limiting the definition of humor to only these types of events may result in a skewed representation of gender differences.

Finally, aside from the rarity of formulaic jokes in face-to-face interaction, there may be other problems with using these stimuli as a way to gauge humor appreciation. Crawford points out that women may not appreciate these types of humor-inducing material for several reasons. One possibility is that women are disproportionately the butt of such jokes (Palmore 1986). Wolff, Smith, and Murray (1934) presented disparaging jokes about Jewish people to both Jews and non-Jews. Not surprisingly, they found that non Jewish people (compared to Jews) appreciated the disparaging jokes. Likewise, choosing jokes and comic strips as the stimuli may introduce a source of bias when studying gender differences in appreciation of humor since women are more often the butt of such jokes.

In sum, there has been a large amount of attention paid to the relationship between gender and humor. Popular culture portrays men as more adept than women at appreciating and producing humor. In general, research in this area has found differences in the way men and women respond to humorous stimuli. Several scholars have questioned the veracity of these

claims, arguing that the results are predicated on biased definitions, conceptualizations, and operationalizations of humor. Armed with a broader definition of humor, Crawford and others argue that the gender effects in previous research are at least overstated and at most artifactual. Through her analysis, she finds far more similarity than difference between men's and women's sense of humor. In sum, there are at least some gender differences in the kinds of humor produce and appreciate. Given that gender and status are often conflated in observational research, further attention is needed to determine if the resulting patterns relate to gender per se. The current research attempts to shed light on this issue.

Status and Humor

With regard to status and humor, most research focuses on how humor can be an effective leadership tool. As discussed in a previous section, many of the functions of humor (e.g. facilitating learning, shaping behavior, promoting creativity, helping others to feel less threatened by change) are useful skills for leaders to have in the workplace (Barbour 1998). Using humor in the workplace has also been shown to have practical implications such as increasing productivity (Avolio, Howell, and Sosik 1996) and decreasing job turnover (Abramis 1992). Given its seemingly profound effects, many researchers have focused on how humor is used and how its users are perceived in the workplace.

Because one of the functions of humor relates to hierarchy-building, it is possible that individuals would differentially use humor depending on their formal status. The term "high status humor monopoly" has been used to convey the extent to which individuals of high status use humor (Duncan 1982). Coser (1960) found that leaders utilize humor more than subordinates and that humor flows downward in the status hierarchy. In a medical setting, Coser found that nurses would joke, but not in the presence doctors. Similarly, Robinson (1991) found

that nurses would joke with patients. Taken together, these studies suggest that nurses would only joke when they occupied the higher status in the interaction.

Not only are humor attempts a function of formal status, but reactions to humor differ by status as well. Crawford (1995) argued that individuals in an interaction may withhold laughter when a person of lower status attempts humor. In this sense, whether or not an attempt is deemed a success or failure may be a way to maintain or alter the status hierarchy. Lovaglia, Rogalin, Soboroff, Kelley, and Lucas (2008) theorize that successful humor will boost a group member's status. Together, these studies imply a reinforcing relationship between successful humor and status with high status individuals being more likely to succeed at humor and individuals who are successful at humor gaining status.

Another documented trend is that humor use increases managers' perceived likeability and effectiveness (Rizzo, Wanzer, and Booth-Butterfield 1999). Decker (1987) found that subordinates who perceived their bosses as having an increased sense of humor were more satisfied with their jobs than individuals who perceived their bosses as not having a sense of humor. Additionally, supervisors who were perceived as having a sense of humor were also seen as more intelligent, friendly, effective, and competent. Decker and Rotondo (2001) also point out that not all types of humor have the same effect. They suggest that leaders who use disparaging and offensive humor may degrade their relationship with subordinates.

The current research is interested in the intersection of gender, status, and humor. Several studies investigate aspects these relationships. Decker and Rotondo (2001) investigated how gender moderates the relationship between using positive/negative humor and perceptions of leader effectiveness. Their results indicated that using positive humor advantaged women, and women were perceived as more effective leaders than men who used positive humor.

Conversely, using negative humor led to perceptions of less effective leaders in general, and women who used negative humor were perceived as worse leaders than men who used negative humor.

Lovaglia et al (2008) devise a theory of gender, legitimacy, and humor suggesting that there may be an interactive relationship between gender and status and the amount of humor used, reactions to humor, and type of humor used. As one example, the authors suggest that men and women leaders may differentially utilize self-deprecating humor. Men may be able to use this type of humor and not sacrifice any legitimacy because he is buffered by beliefs of general competence. Women who use the same kinds of self-deprecating humor may delegitimize their authority because of already negative stereotypes about women in authority. The authors conclude that humor can be used as an effective leadership tool, but its effects may be tempered or exaggerated depending on one's gender.

While these studies attempt to untangle issues of status and gender in interaction, they suffer from some serious drawbacks. Previous measures of humor were gathered from questionnaires rather than actual observation. Given this technique, it is not possible to discern whether the stereotypes surrounding gender and humor affect perception of humor, or whether the findings are based on actual differences in humor use. Ultimately, this preliminary correlational research in conjunction with Lovaglia and others' theoretical contributions suggest a potentially interactive relationship between gender, status, legitimacy, and humor.

Gender and Status in Conversational Interaction

If humor is a status related phenomenon, then it should correspond to other conversational qualities that have been shown to reflect and/or used to negotiate status. While humor has been largely neglected as a status organizing tool, other aspects of conversational

interaction have been studied in depth. In this section, I will summarize extant literature on the topic of gender and status within conversational interaction. If one ultimate goal of the current research is to understand how humor is related to status and gender, then it will important to triangulate humor with other processes already known to be related to status and gender.

This body of research can be categorized under three broad umbrellas: nonverbal, verbal, conversational flow. Nonverbal communication includes such things as gaze and posture. Studies that investigate the verbal aspects of conversation focus on such things as word choice, amount of verbal participation, and using humor. Conversational flow is a term meant to capture aspects of interaction that are neither verbal, nor nonverbal events, but are instead ways in which conversation progresses. Examples of actions categorized under conversational flow include interruptions, turn-taking, and topic shifts. This taxonomy is somewhat arbitrary and merely serves as an attempt to sort numerous kinds of interactional activity into cohesive categories. The following cursory summary of empirical evidence is nowhere near comprehensive.

With regard to participation, talking more within an interaction is considered a marker of high status (Smith-Lovin, Skvoretz, and Hudson 1986). Status Characteristics Theory (Berger 1972) argues that individuals who occupy valued statuses will have higher performance expectations within group interactions, will be given more opportunities to speak by other group members, and therefore, will participate at higher rates than individuals within the group who occupy less valued statuses. James and Drakich (1993) conducted a meta-analysis of gender and conversational participation and found that men spoke more than women in mixed-sex interactions in twenty-four of the fifty-six studies included in the meta-analysis. Fourteen of the studies found gender differences emerged under varying circumstances. Only two studies reported that women speak more than men overall. Finally, sixteen of the studies found no

gender differences in amount of participation. These results suggest that men often talk more than women in mixed-sex interactions. This effect, however, is not overwhelming. James and Drakich also extend their analyses to specific types of interactions (e.g. structured groups, formal task-oriented groups, informal task-oriented groups, and informal groups). They find the same overall gender pattern with slight variations. Regardless of types of interactions, this gendered pattern of participation never fully disappears or reverses. While this overall pattern seems to hold, some researchers point out that the relationship between status and participation is often affected by processes endogenous to the interaction in addition to exogenous status information (Skvoretz 1988).

Another focus within this literature is how interruptions are related to status. Conventionally, an interruption is defined as a violation of turn-taking norms (Robinson and Smith-Lovin 2009). Sociologists typically conceptualize interruptions as a way for high status individuals to maintain the power and prestige hierarchy. Conversational analysts, however, convey interruptions as a tool used to assert dominance and power. Psychologists and linguists view interruptions as manifestations of personality traits. After summarizing the literature and conducting an empirical test, Robinson and Smith-Lovin concluded that the patterns of interruption do not fit cleanly into any of these theoretical frameworks.

Empirically, there is much research documenting the relationship between status and interruptions. Zimmerman and West (1975) found that in mixed-sex conversations men interrupted women far more than women interrupted men. In same-sex conversations, however, they found relatively few instances of interruption. Subsequent studies found that, while absolute *levels* may be higher for men, interruption *rates* for men and women to be similar (Smith-Lovin and Brody 1989). Kollack, Blumstein, and Schwartz (1985) illustrated how

interruptions act as function of power and status rather than gender per se. Using a sample of homosexual and heterosexual couples, results indicated that status (and not gender) was a better predictor of interruptions. Robinson and Smith-Lovin (1990) did find gender differences, with all male groups interrupting less than mixed-sex or all female groups.

In contrast to the traditional views of interruptions as displays of status or tools of the dominant, Robinson and Smith-Lovin (2009) contend that interruptions are part of a dynamic process aimed at monitoring turn-taking norms. Using event history analysis, they found that men interrupted more than women at higher absolute levels, but there was no difference in rates of interruptions (once controlling for participation). They also found that people who had been frequently interrupted in the past were likely to talk longer than average if left uninterrupted. From this, they argue that interruptions are “mechanisms for maintaining the conversational floor-trading process” (p. 16). Despite being relatively rare occurrences, interruptions have received a lot of attention in the literature and with little resolve. Overall, the research indicates that interruptions are in some way related to power and status.

Another area of interest has been topic shifting and how it relates to status. Topic shifting refers to the path that subject matter takes over the course of a conversation. Early work in this area found that while men and women initiated the same number of topic changes, men’s attempts were successful far more often than women’s attempts (Fishman 1977). More recently, Okamoto and Smith-Lovin (2001) found no gender differences in topic changes and concluded that endogenous processes such as participation and interruption histories were more important to the initiation of topic change than the relatively weak diffuse status characteristic of gender. These two seemingly contradictory sets of results may be negotiated by the fact that they sample from different contexts. Fishman (1977) studied topic change amongst intimate partners and the

sample in Okamoto and Smith-Lovin (2001) was composed of college-aged strangers. Perhaps these two studies do not ultimately contradict since gender, participation, and interruptions are all proxies for status in some capacity. Both studies agree in their conclusion that higher status individuals control topic choice throughout the conversation.

In this chapter, I have reviewed some of the previous literature on humor and how it relates to gender and formal status. There are stereotypes suggesting that men and leaders are prone to humor, while women and subordinates are not. Empirically, there has been research to support these notions. Much of the literature on gender and humor shows that men respond more favorably than women to humorous stimuli. Additionally, there is research to show that leaders use humor more than subordinates. There are problems, however, in the argumentation and implementation of the research. Some researchers have suggested that the relationship between one's gender and humor use was merely an artifact of biased study design. Additionally, the relationship between status and humor is questionable since naturalistic observation and surveys cannot easily untangle issues of causal ordering. Gender and formal authority are so often conflated that it is impossible to discern how humor independently relates to either. Finally, in this chapter I reviewed previous work on how several other aspects of conversational interaction (participation, interruptions, and topic changes) relate to status. Several important points mentioned in this discussion are worth reiterating because of their relevance to the current research. First, results can vary depending on whether absolute levels versus rates of a phenomenon are evaluated. The current research will evaluate both. Second, gender and status are often conflated. Because they are often correlated, status processes may

actually be interpreted as gender processes since sex information¹ is apparent when other status information is not. The current study will manipulate formal status in groups with different gender compositions to investigate their respective effects. Finally, while exogenous status information may have an effect on aspects of conversational interaction, endogenous processes are also important. The temporal and cumulative effects of a conversation will be accounted for with event history techniques. In sum, the current research attempts to alleviate previous shortcomings by observing actual humor behavior within various types of group structures so that the effects of gender and status can be separately evaluated. In the next chapter, I pull from and add to Robinson and Smith-Lovin's (2001) theory of humor. With this theory, I outline several hypotheses about the relationship between humor and various individual and group characteristics.

¹ Sex refers to biological categories of male/female and gender refers to the socially constructed categories of masculine and feminine, with the corresponding labels man and woman (West and Zimmerman 1987). For Robinson and Smith-Lovin (2001) and in the current study, the theoretical focus is the operation of gender within interaction. In both studies, sex was used in the methodological manipulation and gender is assumed to correspond. Therefore, when talking about the methods, I will refer to males/females/sex, and when discussing the methods as they relate to theory, I will use the terms men/women/gender.

CHAPTER 3

THEORY AND HYPOTHESES

Impact of Individual Characteristics on Humor

The current research is not the first attempt to devise a theory of gender and status within interaction. Robinson and Smith-Lovin (2001) contrasted four theories regarding the social functions of humor (meaning-making, hierarchy building, cohesion-building, and tension relief) in an effort to construct a theory of gender, status, and humor. Their findings suggest a hierarchy-building / status reflecting quality to humor. Using event-history analysis, the researchers investigated how gender, gender composition, participation, interruption history, and the temporal dynamics of interaction account for humor use in small, task-focused groups. Overall, they found that being male in a mixed-sex group and being a frequent interrupter corresponded to higher rates of humor use. Additionally, being frequently interrupted (an indicator of low status) corresponds to a decreased rate of humor use. In further support of the notion that humor is used as a status marker and/or as a way of negotiating status, Robinson and Smith-Lovin found that men and high participators are more likely to use differentiating types of humor, and that women are more likely (although not statistically significantly) to use cohesive types of humor. One perplexing finding suggested the relationship between humor and gender is not solely status-related. All-female groups (as compared to all-male and mixed-sex groups) produced the most humor of all (Robinson and Smith-Lovin 2001). Robinson and Smith-Lovin conclude their discussion with a provisional theory humor and group processes.

The current research will attempt to untangle these issues further by implementing a different experimental design and testing several of their formally stated propositions. The Robinson and Smith-Lovin groups were composed of peers with no clear leadership structure. The current design manipulates gender composition, formal role within the group, and the legitimacy structure of the group overall in order to see how gender, status, and legitimacy individually and collectively relate to humor. The Robinson and Smith-Lovin propositions pertain to individual-level characteristics such as gender and formal status. Additionally, the current project is interested in how group-level characteristics such as the legitimacy of the leader and/or the overall clarity of the status structure affect humor usage. In order to hypothesize about how group structure affects humor, I have extended the theory using the tenets of Status Characteristics Theory. In the following section I will describe the concept of a *status hierarchy slope*, a term I am using to connote the overall clarity of a group structure.

Impact of Group Characteristics on Humor

A main goal of the current research is to advance a more structural theory of humor within interactions. There has been a strong theoretical tradition investigating the effects of individual-level status on various aspect of face-to-face interaction. With the exception of Robinson and Smith-Lovin (2001), humor has yet to be rigorously tested as a potential means for negotiating status structures. The goal of this paper is to elaborate a more structural theory of humor and determine which types of group structures are more or less conducive to humor. I will apply the tenets of Status Characteristics Theory (Berger 1972; Berger, Ridgeway, Fisek, and Norman 1998; Berger and Webster 2006; Ridgeway 1988) to construct a dynamic theory of gender, status, and humor in small group interaction.

Expectation States Theory (EST) is social-psychological paradigm that attempts to

explain how behaviors are shaped by expectations. The expectation states tradition was born out of the work on Bales, Strodtbeck, Mills, and Roseborough (1951) which documented how inequalities emerge and remain stable in task-oriented groups comprised of members of similar status (namely white, middle-class men). During the interaction, a hierarchy would form even though none of the individuals varied on any overt traits. Specifically, some members were given more opportunities to contribute, attempted to participate more, were evaluated more positively because of their contributions, and were overall more influential. These behavioral inequalities that develop in a group comprise the observable power and prestige order. Berger (1972) argued that under certain conditions (e.g. being task oriented and collectively oriented), individuals will develop behavioral expectations about themselves and others. Power and prestige behaviors follow from these performance expectations and a hierarchy develops within the group. This line of research was later extended to explain not only the behavior of equal status members within a group, but also groups in which members differ by status.

Status Characteristics Theory (SCT) is an offshoot of expectations research that attempts to understand how behavioral expectations form in situations where individuals differ on a particular status. A status characteristic is any characteristic associated with expectations or beliefs (Berger and Webster 2006). Status characteristics that have been studied within this theoretical paradigm include gender (Ridgeway 1991), race (Berger, Cohen, and Zelditch 1972), and even beauty (Webster and Driskell Jr. 1983). There are two types of status characteristics: specific and diffuse. Specific status characteristics carry with them specific expectations relevant to the task. Being a biologist in a group of social workers could be a specific status characteristic if the task involves dissecting and identifying the anatomy of a frog. Group members would expect an expert to know about this subject and would likely defer to the

biologist in making task-related decisions. Some status characteristics do not carry specific expectations, and instead hold more general assumptions about competency and intelligence across a variety of situations. These are known as diffuse status characteristics. Race is one example of a diffuse status characteristic in which members of the dominant group (e.g. Caucasians) are believed to be more competent across a wide variety of situations than members of a minority group (e.g. African-Americans).

The current research will link humor to two status characteristics: gender and formal authority (operationalized as being assigned a supervisory versus assisting role). Gender is conceptualized as a diffuse status characteristic within our society because it carries expectations about individuals' general competence and how they should behave across situations. These expectations shape the behavior of interactants within a group. Specifically, the expectation states paradigm predicts that men will exhibit more power and prestige behaviors when interacting with women on a gender neutral task (Berger and Webster 2006). This will occur because men are believed to be generally more competent than women (all else being equal). If the task is stereotypically masculine (e.g. automotive), this pattern will become exaggerated. If the task is feminine, the theory predicts that women will exhibit more power and prestige behaviors since they are supposed to be knowledgeable about feminine things (e.g. cooking). According to SCT, gender indirectly affects the power and prestige order because it is linked to beliefs about general competence.

Formal authority has been conceptualized in previous research as a type of specific status characteristic (Johnson 1992; 1993; Johnson, Clay-Warner, and Funk 1996). Johnson (1993) argues that within organizations, supervisors are perceived to be the right and proper person for that role, and assumed to be more skilled at many tasks, particularly managerial tasks.

According to status characteristics theory, formal authority also affects the power and prestige order because it is directly linked to task competence. Because formal authority is directly linked to performance expectations and gender is only indirectly related to performance expectations, formal authority should have a stronger effect than gender on power and prestige behaviors (Johnson 1993). The relative ‘weighting’ of formal authority versus gender will be discussed later in the chapter when constructing a measure of group clarity.

These status organizing processes are often observed in laboratory settings by manipulating a status (or multiple statuses), and then measuring behavior of group members. Often, status influence is measured by how lower status members’ answers to ambiguous questions are altered in order to conform to the higher status members’ answers (Berger, Cohen, and Zelditch 1972). As status advantages increase in number or degree, the higher status individual should become more influential, and lower status individuals should exhibit more deference. Although deference is most often used as a measure of influence, other types of behaviors may be affected by status structures. For example, contesting behaviors may be inversely related to deference behaviors. The opposite of deference (i.e. contest) has been underexplored as a way to measure the power and prestige order within group interactions. Ridgeway and Berger (1986) point out that even though strong forms of dominance behavior (e.g. behavioral directives, staring another down, and shouting) are relatively rare, they may serve as an important means of establishing status hierarchies in face-to-face interaction. Interruptions may represent a softer version of dominance (Kollack, Blumstein, and Schwartz 1985; Zimmerman and West 1975), and have been shown to relate to status (Robinson and Smith-Lovin 2009). Like interruptions, humor too may be a softer form of dominance, perhaps as a way to veil hostility (Kahn 1989).

Norman, Smith and Berger (1988) found that clarity and strength of the status hierarchy impacted deference behavior such that individuals with multiple consistent and valued statuses (i.e. relatively clear status differentiation) were more likely to engender deferent behavior from others than individuals who had only one valued status characteristic (i.e. relatively ambiguous status differentiation). Individuals with only one valued status characteristic were more likely to inspire deference than individuals with contradictory status information (i.e. one valued status and one devalued status). Finally, individuals with contradictory status information were able to inspire more deference in others than individuals in a group of peers (i.e. no status differences). Thus, we can see that deferent behavior is related positively to the amount and consistency of status information. If we assume that humor is a status-organizing process inversely related to deference, then the SCT framework can be used to identify which types of group structures will produce more/less humor. If humor is a way of negotiating and defining hierarchy structures within a group, then we should expect to see more humor in tenuous and ambiguous groups.

Aggregating the findings of Norman et al (1988) to the level of the group, we can define groups according to the clarity of their status structures. For example, having a strongly legitimated male leader supervise a group of females conforms to our formal and informal notions of status. In general, men are believed to be more competent than women. This belief conforms to our status expectations surrounding the diffuse status characteristics of gender. Additionally, his legitimacy as a leader conforms to our expectations surrounding formal authority; supervisors are chosen as leaders based on qualifications (Zelditch and Walker 1984). This belief conforms to our status expectations surrounding the specific status characteristic of formal authority. Overall this group's structure is unambiguous. I will consider groups such as these to have a *steep* status hierarchy slope because there is a clear differentiation between

superordinates and subordinates. These types of groups should produce high levels of deference on the part of the subordinates, and if humor is inversely related to deference, then these types of groups should produce fewer instances of humor.

Now consider a group at the other end of the structural clarity spectrum: a weakly legitimated female leader supervising male subordinates. Perhaps this leader is less legitimate because she was chosen to lead at random instead of on the basis of merit². This contradicts our notions of status hierarchies formally and informally. First, having a woman supervise a group of men contradicts expectations for the diffuse status characteristics of gender, since women are generally believed to be less competent than men. Second, leaders are supposed to be chosen on the basis of qualifications. Therefore, having a low legitimacy leader contradicts our expectations for the specific status characteristic of formal authority. I will consider groups with these types of structures as having *flat* status hierarchy slopes because the delineation between superordinates and subordinates is less clear, and even contradicts conventional beliefs about how groups ought to be structured. These types of group structures will engender less deference because the structure is not legitimated; it may even result in acts of dominance in an effort to challenge and reorganize the structure. Again, if humor is inversely related to deference, then groups with flatter status hierarchy slopes should utilize humor at higher rates.

By manipulating legitimacy of supervisor, gender of supervisor, and gender of assistants (with both assistants the same gender as each other), there are eight possible group structures (Figure 3.1). Two of these groups (described above) have been identified as the polar ends of the status hierarchy spectrum. The other six group structures fall somewhere in between. Each of

² She is not nonetheless legitimate (albeit weakly) because she was placed in the position through the process of authorization (Zelditch and Walker 1984) by a legitimate third party (i.e. the experimenter).

the eight groups can be evaluated on how the formal and informal status information combines and aligns with our expectations about specific and diffuse status characteristics. As illustrated in Figure 3.2, the groups listed in Figure 3.1 can be ordered on a continuum from groups with relatively flat status slopes to ones with steep status slopes based on the answers to two questions. First, is the group structure highly legitimated? Second, does the gender composition conform to our status expectations about who should be in charge over whom? Even simpler, the groups can be ordered with the following rule: two pieces of conforming (i.e. conforming to our conventional beliefs about how groups should be organized) information induce a clearer group structure than one piece of conforming information, a single piece of conforming information is better than contradictory information, contradictory information brings about more clarity than the information that contradicts our beliefs about group structures, which is better yet than the multiple pieces of information that go against how we believe groups ought to be structured.

As previously mentioned, the group with the flattest status slope occurs where a low legitimacy female leader supervises male subordinates. This group has the flattest status slope because notions of formal and informal status are violated, and there is little available status information to differentiate group members' roles. The next group on the continuum has a slightly steeper slope. In this group, norms of formal status are violated, but there is no information about informal status (i.e. gender is not salient). Groups within this category have low legitimacy leaders who are the same gender as their subordinates. The next two types of group have even steeper status slopes because one piece of confirming piece of status information and one piece of disconfirming piece of status information. Group 3 is formally disconfirming because the leader is chosen at random instead of on the basis of merit, but is

informally consistent with expectations because a male is leading a group of female subordinates. Group 4 reverses this pattern by having formal consistency with expectations (high legitimacy leader) but informal inconsistency because men are being led by a woman. Despite the fact that groups 3 and 4 contradictory status information, they have different hierarchy slopes because I have conceptualized formal status as a specific status characteristic and gender as a diffuse status characteristic. Because specific status characteristics carry more weight than diffuse status characteristics (Johnson 1993), I have ranked the former group as having a flatter status slope and the latter as having a steeper slope. Group 5 has a steeper slope than all previous groups because the group structure is formally consistent with societal notions about legitimate leaders, but there is no information about informal status. These types of groups have legitimate leaders but no gender differentiation between subordinates and superordinates. Finally, the group with the steepest status slope (i.e. most well-defined structure) is the group discussed previously where there is a legitimate male leader supervising female assistants. This group has the steepest hierarchy slope because it conforms to both formal and informal status expectations about who should be in charge.

In sum, the group-level variable of status hierarchy slope was constructed with two pieces of information: legitimacy of supervisor and supervisor's gender relative to assistants' gender. Groups with steeper status hierarchy slopes are more well-defined and unambiguous. Groups with flatter status hierarchy slopes are less well-defined and more ambiguous. This variable captures the overall clarity of the group structure, and will allow me to make specific predictions about how group-level characteristics affect humor use.

Hypotheses

According to Robinson and Smith-Lovin (2001), humor is a conversational phenomenon related to status. In their theoretical exposition, they outline several propositions that have yet to be formally tested. Because all of the previous theory's propositions are at the individual-level, I will also insert new propositions about group-level effects of legitimacy of the leader (a grosser measure of structural clarity) and status hierarchy slope (a more nuanced measure of structural clarity). I will now introduce eight sets of hypotheses. These hypotheses aim to answer the following questions: What types of groups and individuals are likely to attempt humor? What types of groups and individuals are likely to succeed at humor? How do individual and group characteristics influence the type of humor used?

With regard to humor attempts, Robinson and Smith-Lovin (2001) state that if we assume humor is an expression of power, then the following hypothesis can be made about the relationship between status and humor attempts:

Hypothesis 1: High status group members will use more humor than low status group members.

Given the experimental design (outlined in Chapter 4), three sub-hypotheses can be made with regard to the relationship between status and humor attempts.

1a: Men will attempt more humor than women.

1b: Supervisors will attempt more humor than assistants.

1c: High participators will attempt more humor than low participators.

With an additional assumption, several statements can be made about how group structures influence humor use. If we assume that humor is way to renegotiate and establish status structures then:

Hypothesis 2: Clarifying the structure of a group will decrease humor attempts.

2a: High legitimacy groups will have fewer humor attempts than low legitimacy groups.

2b: As the status hierarchy slope steepens, humor attempts will decrease.

Robinson and Smith-Lovin also propose that the outcome of a humorous attempt (i.e. whether it succeeds or fails) is also conditioned by status. The third set of hypotheses state:

Hypothesis 3: High status group members will be more successful (i.e. elicit appreciation in the form of laughter) in their humor attempts than low status group members.

3a: Men will have more successful humor than women.

3b: Supervisors have more successful humor than assistants.

3c: High participators will have more successful humor than low participators.

Additionally, if we assume that humor is a status-organizing process used to contest and redefine status structures, then humor success should also be related to group-level characteristics. Groups with defined status structures are more likely to increase honorific deference (Norman, Smith, and Berger 1988). As group structure becomes less-well defined, members of that group may be more open and receptive to contesting the status structure. This receptiveness to contesting status structure may manifest as supporting the speaker by laughing at his/her humor attempt (i.e. successful humor).

Hypothesis 4: Successful humor will decrease as group structures are more clearly defined.

4a: Successful humor will be lower in high legitimacy groups than low legitimacy groups.

4b: Successful humor will decrease as status hierarchy slope steepens.

One important thing to note with successes is that rates of success may be more meaningful than absolute levels. For example, the hypotheses regarding men predict the same relationship for humor attempts and successes. If we find that men have high number of attempts, and that they also have more successes, we will not be able to say whether the increase in successes is above and beyond what would have been expected given their higher overall attempts. The analyses in Chapter 6 will include models investigating levels and rates of success.

Status processes may also reveal themselves in the type of humor that individuals and groups use. Robinson and Smith-Lovin made propositions about how individual-level characteristics affect the type of humor people will use. As discussed in previous chapters, the functions of humor can be reduced to two categories. Cohesive humor aims to strengthen within group ties and emphasize sameness. Differentiating humor helps to challenge and redefine status hierarchies by emphasizing differences. Robinson and Smith-Lovin argue that equalizing humor will be used by low status individuals, and that hierarchy-building humor will be used by high status group members because it serves their respective interests to either downplay or emphasize the group's hierarchy. Additionally when investigating how person/group characteristics affect type of humor, the analyses will include models that investigate both levels and rates of humor type.

Hypothesis 5: High status individuals will be less likely than low status individuals to use cohesive humor.

5a: Men will be less likely than women to use cohesive humor.

5b: Supervisors will be less likely than assistants to use cohesive humor.

5c: High participators will be less likely than low participators to use cohesive humor.

Hypothesis 6: High status individuals will be more likely than low status individuals to use differentiating humor.

6a: Men will be more likely than women to use differentiating humor.

6b: Supervisors will be more likely than assistants to use differentiating humor.

6c: High participators will be more likely than low participators to use differentiating humor.

Finally, the overall group structure may influence what type of humor predominates interaction. The divisive form of humor may act as a way to negotiate status structures and the more equalizing humor may serve to maintain status structures. Therefore:

Hypothesis 7: Cohesive humor will be directly related to clarity of the status structure.

7a: High legitimacy groups will produce more cohesive humor than low legitimacy groups.

7b: As the status hierarchy slope steepens, cohesive humor will increase.

Hypothesis 8: Differentiating humor will be inversely related to the clarity of status structures.

8a: High legitimacy groups will produce less differentiating humor than low legitimacy groups.

8b: As the status hierarchy slope steepens, differentiating humor will decrease.

In sum, both Robinson and Smith-Lovin and I argue that humor is a status related process. I have pulled directly from Robinson and Smith-Lovin the individual-level propositions about status and humor. Based on their working theory of humor as a group process, I

hypothesize that high status traits will be associated with more humor attempts, more humor successes, and utilizing differentiating humor. Conversely, low status traits will be associated with fewer humor attempts, fewer humor successes, and utilizing cohesive humor.

In addition to formally testing Robinson and Smith-Lovin's propositions, another goal of this project is to develop a structural theory of humor that incorporated group-level characteristics. Using the principles of Status Characteristics Theory, I have constructed a measure that captures the overall clarity of the group structure that I have termed the *status hierarchy slope*. If humor is a way of contesting status structures, then it should become more prevalent in groups where the structure is ambiguous. From this, I hypothesize that humor attempts and successes will decrease as structural clarity increases. I also hypothesize that cohesive humor will be directly related to clarity of structure, and that differentiating humor will be inversely related to the clarity of the group structure. In the next chapter I will outline the methodology utilized to test the eight sets of hypotheses. First, I will outline the study design and implementation. Second, I will spend some time exploring the issue of coding humor within these interactions. Third, I will, propose separate analytic strategies that will be used to test the hypotheses.

		<i>Position</i>	
		<i>Supervisor</i>	<i>Assistants'</i>
<i>Legitimacy</i>	<i>High</i>	Man	Men
		Man	Women
		Woman	Men
		Woman	Women
	<i>Low</i>	Man	Men
		Man	Women
		Woman	Men
		Woman	Women

Figure 3.1: Groups by Legitimacy, Supervisor's Gender, and Assistants' Gender

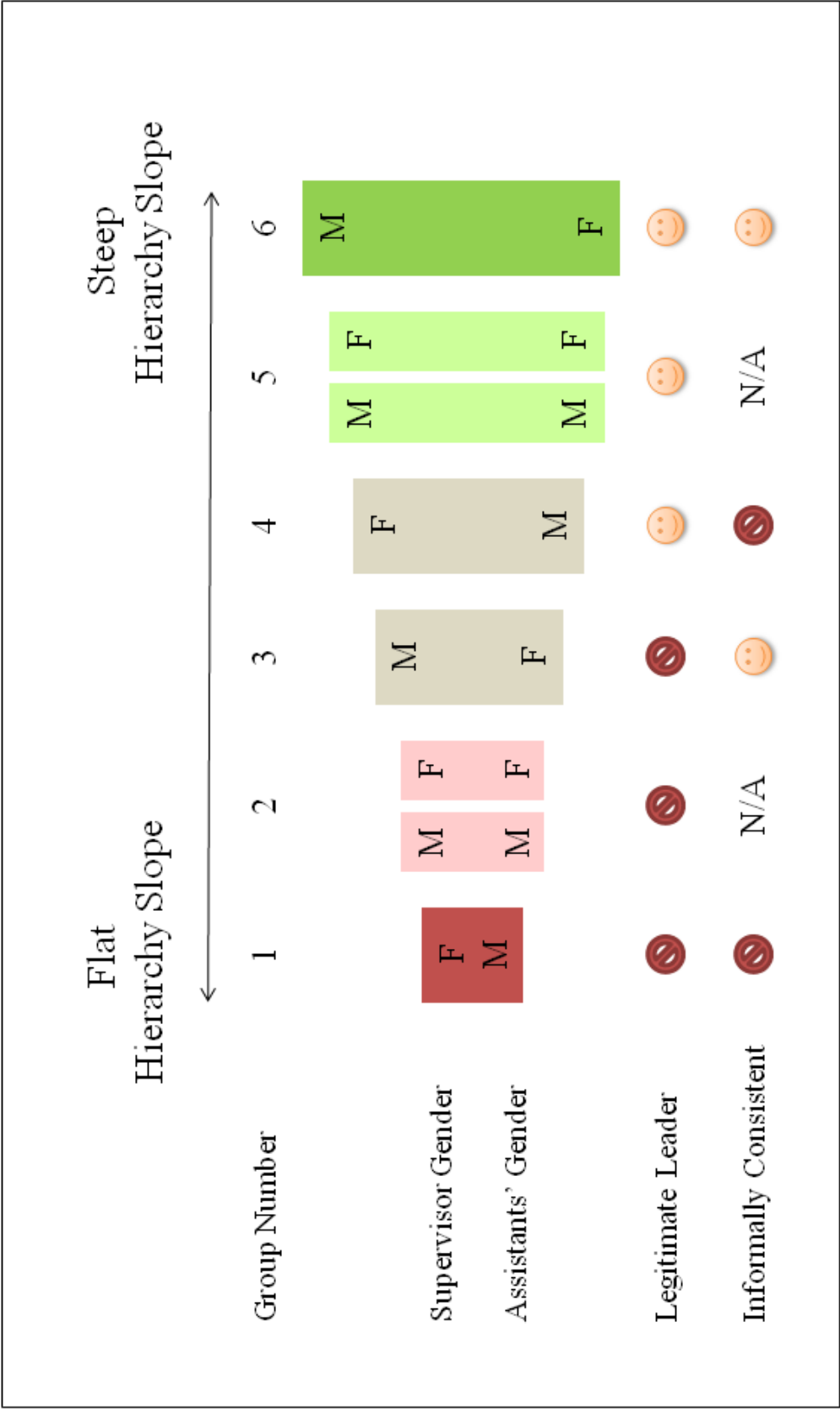


Figure 3.2: Groups Ordered According to the Slope of the Status Hierarchy

CHAPTER 4

METHODS

Design

Forty-three groups were asked to create a radio commercial advertising their University to out-of-state students. Each group included three members: one supervisor and two assistants. Students were recruited from introduction to Sociology classes and were given extra credit in class for their participation. For additional incentive, groups were told that the group that produced the best commercial would win \$30. Groups were given twenty minutes to complete the task. Gender of the supervisor, gender of assistants, and legitimacy of the supervisor were independently manipulated, resulting in a 2 x 2 x 2 design.

Before the task began, each participant was asked a series of questions regarding academic history, work history, and previous leadership experience. Participants also completed a creativity measure. The experimenter collected the completed questionnaires and left the room for a few minutes. Upon returning, the experimenter told the participants that previous research indicates that having a good leader is integral to a group's success. Legitimacy was then manipulated in the form of authorization from the researcher. In half the conditions the experimenter would say that because there was no way of knowing who would be a good leader, each participant was randomly assigned to the role of supervisor or assistant. This was the *low legitimacy* condition. In the *high legitimacy* condition, and after participants were told that having a good leader is important, the experimenter would say "Therefore, we assigned ____ to be the supervisor and ____ and ____ to be assistants." This wording implied that the group's

structure was legitimate without explicitly stating the criteria used to determine the role assignment. Group members were left to assume that role assignments were based on information gathered from the questionnaires. At this point, the participants were escorted to the “board room” where they would complete the task. The assigned roles were made salient in several ways. Each group member wore a badge that said “Supervisor” or “Assistant”. The supervisor and assistants also sat in role-labeled chairs and worked from separate role-labeled manuals. Manuals only varied in the role-label and role description, and did not provide substantively different instructions about the task. Sex composition was also manipulated. In mixed-sex conditions, the supervisor was the opposite sex of the assistants. In same-sex conditions, the supervisor was the same sex as the assistants. Assistants were always the same sex as each other. A summary of the conditions was presented in Figure 3.1.

During the experiment, group members were recorded from three vantage points using 8mm video cameras. An alarm sounded after twenty minutes had passed to signal the end of the task. After the task was over, the experimenter escorted participants to separate locations to complete post-task questionnaire. The questionnaire asked questions about the participants, the other members of their groups, and their overall impressions of the task itself.

Dependent Measures

Each group interaction was transcribed and transcripts were coded for humor independently by two trained coders who were not involved in the group interactions. Coders were blind to condition, gender of speaker, and laughter. Removing these cues ensured that the coders assessed each utterance without any predispositions toward coding humor. Each utterance was judged to be either an attempt at humor, or serious (i.e. not intending humor). From now on, turns that were judged by coders to attempt humor will be referred to as *coded*

humor. An utterance was only coded as humorous if both coders independently and unanimously agreed that humor was intended. Coded humor was then qualified as being successful or failed. *Successful* humor refers to coded humorous attempts that yielded laughter by someone other than the speaker. If the coded humor attempt yielded no laughter or only laughter from the speaker, the humorous attempt was coded as *failed* humor.

The above explicated coding scheme will now be referred to as the *Aikens* coding scheme. Because this research attempts to build upon the theory of humor put forth by Robinson and Smith-Lovin (2001), it is important to discuss the ways in which the current coding scheme departs from the previously used coding scheme. The coding scheme used by Robinson and Smith-Lovin will be referred to here on as the *RSL* humor coding scheme. Delineating the overlap and distinctions between these two coding schemes is theoretically important.

Up to this point, the current coding scheme is identical to the RSL coding scheme. In addition to the above definition of successful humor, the RSL coding scheme also defined any turn that inspired laughter as successful humor. In other words, in the Robinson and Smith-Lovin scheme, successful humor was possible in one of two ways. First, successful humor occurred coded if coders determined an utterance to be humorous and the utterance yielded laughter by someone other than the speaker. Second, turns were coded as successful humor if the turn yielded laughter by someone other than the speaker, despite the fact that external coders did not define the utterance as an attempt. Failed humor attempts are defined identically across both the Aikens and RSL coding schemes: external coders inferred an utterance to intend humor and no one (at least no one other than the speaker) laughed. In sum, the Robinson and Smith-Lovin coding scheme resulted in three categories of speech: successful humor attempts, failed humor attempts, and nonhumorous utterances.

What about instances where individuals in the group laughed, but the laughter was not preceded by an utterance that was coded as humorous? In the RSL coding scheme, these instances were defined as successful humor. Subsuming these instances of laughter under the umbrella of successful humor may be responsible for that unusual finding in Robinson and Smith-Lovin (2001) where all female groups had the most instances of attempts and successful humor. Research has shown women laugh more than men in interaction (Dovidio, Brown, Heltman, Ellyson, and Keating 1988), it is possible that women's increased 'humor' use in female-only groups is merely a reflection of increased laughter. Therefore, this finding may have been an artifact of the coding scheme. According to the RSL coding scheme, any instance of laughter assumed the previous turn inspired this laughter. Laughter could, however, be brought about in other ways besides intentional humor (e.g. nervous laughter). The Aikens coding scheme imposes a stricter criterion for successful humor and thus considers a fourth, previously subsumed category of utterances. In the Aikens coding scheme, whenever an individual laughs after a turn that was not coded as humorous, it is categorized as *spontaneous laughter*. A comparison of the coding schemes is illustrated in Figure 4.1.

Finally, coded humor was coded by type as *cohesive*, *differentiating*, or *uncategorizable* (Robinson and Smith-Lovin 2001). The criteria used for this categorization did not vary between the RSL and Aikens coding schemes. Cohesive humor is that which builds cohesion and emphasizes in-group similarities and out-group dissimilarities. Humorous attempts were coded as cohesive if they were about the group, individuals outside the group, or about students in general. Differentiating humor is defined as that which treats individuals as separate. Humorous attempts were coded as differentiating if they were about the speaker, about a subset of individuals, or highlighted differences between group members.

Control Variables

Participation is a potentially relevant control variable to the current research because it could have independent effects on humor use. It is possible that the more time people spend interacting, the more comfortable the group members become, which leads to subsequent instances of humor. Participation at the group level could have an effect on whether or not humor is used and what types of humor are used. For example, increased levels of individual participation in interaction has been regarded as a status marker (James and Drackich 1993; Tannen 2007). To argue that humor is a status-organizing process, we need to be sure that it's not simply a function of other status-organizing processes such as participation.

Participation at the group level can be conceptualized/operationalized several different ways. One way to operationalize participation is temporally; the more seconds/minutes/hours a group spends speaking. This conceptualization does not account for how fast/slow people are talking. One group may say very little in a short amount of time while another group may say a lot of information quickly. A second way to operationalize participation would be to sum the number of turns group members took over the twenty minute interaction. This is also problematic, as individuals may say varying amounts of words across turns. A turn of 100 words and 1 word would be considered equivalent. Therefore, I propose to use a third method of operationalizing participation: the total number of words spoken by individuals in a given turn, and the total number of words the group uses over the course of the interaction.

Analytic Strategy: Event History Analysis

Event history analysis has been used to study many sociological processes, including humor (Robinson and Smith-Lovin 2001). A benefit of this technique is its ability to account for how processes are affected by cumulative processes. From these analyses, I will be able to

evaluate how the characteristics at any given point in time affect the chances of an event occurring. Event history analysis in this particular application will allow me to see how characteristics of turns affect the likelihood of humorous events occurring. In the logic of Event history analysis, independent variables of interest such as legitimacy of the group, speaker gender, and how many words have been spoken all constitute characteristics of turns. Using this method allows the researcher to see how an event occurring affects its future rate of occurrence. For example, Robinson & Smith-Lovin (2001) found that an instance of successful humor increased the rate at which further successful humor would occur. In other words, this method is able to detect contagion and suppression of phenomena.

To determine which type of model best approximates the data, I plotted the cumulative hazard rates against the Cox-Snell pseudoresiduals (generalized residuals) for four different logarithmic functions (Exponential, Weibull, Log-Logistic, and Log-Normal). In better fitting models, the plot should represent a straight line with a slope of 1 that intersects the origin (Blossfeld, Golsch, and Rohwer 2007). Model specification is discussed further in Chapters 5 and 6.

In conclusion, while event history analysis allows for great flexibility with regard to understanding how events are time-dependent, it violates the assumptions of independence between cases. In this application, turns are not independent, but rather nested within individuals who are nested within groups. Because of this, I will compare the results obtained from the event history analyses to results obtained through hierarchical linear models, a technique that is able to account for the lack of independence between cases.

Analytic Strategy: Hierarchical Linear Modeling

Hierarchical linear modeling (HLM) is appropriate to use whenever there is nested data. In the current application, speaking turns are nested within individuals, and individuals are nested within groups. There is not independence between cases since they are linked by qualities pertaining to individuals or larger groups. Traditional linear models such as ordinary least-squares regression and event history analysis often aggregate to the group level or disaggregate to the individual level, and in doing so, violate the assumption of independence samples (Frankfort-Nachimias and Leon-Guerrero 2006). Hierarchical linear models were developed to allow the researcher to simultaneously look at within-person and between-group variation on the dependent measure without compromising the independence assumption (Raudenbush and Bryk 2002). Hierarchical models, therefore, are appropriate for the current application because it will allow us to see how humor is affected by individual-level characteristics such as gender and role, while also controlling for group-level characteristics such as legitimacy and gender composition. Despite being able to account for the nested nature of this data, HLM is not able to deal with time-dependence in the same way as event history analysis.

For the models presented in the results section, turns were aggregated to the person-level. Therefore, the dependent measures are within-person counts. Because the dependent measures are in the form of count data, a Poisson sampling model with a log link was used (Raudenbush and Bryk 2002). Results can be interpreted as increases or decreases in the log of the event rate. Additionally, these models were specified with overdispersion since the actual level-1 variance may be larger than expected under the level-1 sampling model (Raudenbush and Bryk 2002). Only Poisson models with overdispersion are presented in the results. Further analysis (not presented) revealed that substantive findings were robust across models without overdispersion.

specified, as well as models that treated the dependent variables as continuous. The specifications of each model are described in greater detail in Chapter 6.

In the following chapter I will discuss the coding schemes in relation to several issues. First, can the results of Robinson and Smith-Lovin be replicated using the RSL coding scheme? Second, can the new coding scheme help to shed light on the curious finding in Robinson and Smith-Lovin (2001) that all-female groups had the highest use of humor? Third, do the coding schemes substantially differ in the types of patterns they reveal? Fourth, which coding scheme is most appropriate for answering the current research questions?

Aikens Coding Scheme				Robinson and Smith-Lovin Coding Scheme			
<i>Laughter</i>		<i>Coded Humor Attempt</i>		<i>Laughter</i>		<i>Coded Humor Attempt</i>	
		Yes	No			Yes	No
	Yes	Successful Humor	Spontaneous Laughter		Yes	Successful Humor	Successful Humor
	No	Failed Humor	Serious Utterances		No	Failed Humor	Serious Utterances

Figure 4.1: Comparing Aikens' and Robinson and Smith-Lovin's Coding Schemes

CHAPTER 5

COMPARING HUMOR CODING SCHEMES

Robinson and Smith-Lovin (2001) reported a curious finding and had difficulty accounting for it with their theory. In their study, all-female groups were the most prone to humor compared to mixed-sex and all-male groups. This finding goes against many previous studies that find men use humor more than women. A simple status or gender explanation does not predict this result. An alternative explanation is that the finding is an artifact of the coding scheme. If the RSL coding scheme is using laughter as a criterion for identifying humor, and if women laugh more (Dovidio et al. 1988), the coding may be creating a false impression that women joke more. In this chapter, I will try to untangle these issues. First, I will attempt to replicate this perplexing finding and explain it as a function of coding scheme. Next, I will run several models for each coding scheme in an effort to choose the one most appropriate one for answering the research questions at hand.

Descriptive Statistics

A summary of the descriptive statistics is presented in Table 5.1. Across the forty-three groups, there were a total of 11,693 turns. Of these, only 600 Aikens humor attempts were made and 1,597 RSL humor attempts were made. RSL humor attempts represented approximately 14% of turns whereas Aikens humor attempts only occurred in 5% of turns. For both coding schemes, individuals' attempts at humor were more likely to succeed than fail. Additionally, cohesive humor was used more often than differentiating humor. These two overall patterns were

also true within the subgroups men, women, supervisors, assistants, and for individuals in groups with varying degrees of structural clarity.

With regard to person-level counts on the dependent variables of interest, there appeared to be differences between men and women. Men participated more (i.e. spoke more words) than women on average. Men and women attempted equal amounts of RSL humor (approximately 12 instances over the course of an interaction). Men's average number of RSL successes was higher than women's, but women's average number of RSL failures was higher than men's. Men also had higher average counts of Aikens attempts, successes, and failures than women. Men used more cohesive humor than women, but used approximately equal amounts of differentiating humor. Women were more likely than men to have instances of spontaneous laughter.

There were also some systematic differences according to formal role. Supervisors spoke an average of 85 additional words than assistants. Supervisors and assistants attempted relatively equal amounts of RSL humor, but assistants attempted more Aikens' humor than supervisors. Supervisors had higher average counts than assistants with regard to spontaneous laughter.

Individuals' humor behavior was also conditioned by the overall structure of the group within which they were embedded. For example, individuals in groups with more ambiguous structures (i.e. low legitimacy groups and groups with the flattest status slope) had higher average counts of RSL humor attempts, RSL successes, RSL failures, Aikens attempts, Aikens successes, Aikens failures, cohesive humor, differentiating humor, and spontaneous laughter than individuals who were interacting in more well-defined groups (i.e. high legitimacy groups and groups with the steepest status slope).

Replicating Robinson and Smith-Lovin (2001)

The event history models in Robinson and Smith-Lovin (2001) were specified with a Weibull distribution. This model is preferred over a standard Cox regression when there is evidence of time-dependence (Hannan 1989). Instead of assuming that the current data follows the same time-dependent pattern as it did in Robinson and Smith-Lovin (2001), I conducted a diagnostic test comparing four possible time-dependence functions for both RSL and Aikens coding schemes. The results of these diagnostic analyses can be seen graphically in Figures 5.1 and 5.2. As seen in the graphs, the Log-Normal function best approximates the RSL humor attempt data. The results are less clear for the Aikens humor attempt data. For Aikens humor attempts, the Weibull and Log-Logistic graphs appear nearly identical and the Log-Normal graph appear to be a slightly poorer fit than either the Weibull and Log-Logistic distributions. I ran the analyses for the Aikens humor attempts with both the Weibull and Log-Normal functions and the findings did not substantively differ. Therefore, despite the fact that the Log-Normal distribution did not fit the Aikens humor data as well as the Weibull distribution, I chose to utilize the Log-Normal function in all models presented in this paper to make direct comparison easier between Aikens and RSL models. This does, however, make direct comparison to the results presented in Robinson and Smith-Lovin (2001) more difficult since those models assumed a Weibull distribution. While there is a mathematical/theoretical difference between these functions, this choice had no practical implications for the results. Subsequent analysis not shown here reveal that regardless of model specification, the results were identical. Therefore, I proceed with the Log-normal model since it requires the least amount of compromise for both coding schemes.

Table 5.2 shows the results that replicate the Robinson and Smith-Lovin (2001) findings. The coefficients in the hazard models refer to the effect of the covariate of the wait-time until

humor. Positive coefficients indicate longer wait-time until humor, and negative coefficients indicate a shorter wait-time until humor. If the coefficients are reversed, they can be discussed in terms of the effect of the covariate on the *rate* of humor. In reference to these findings, humor attempts and successes refer only to the RSL coding scheme.

Substantive findings from the replication analyses show that all-male groups are less likely to joke than mixed-sex groups ($b = .85, p < .001$). All male groups are also less likely to have successful humor than mixed sex groups ($b = .99, p < .001$). Being a high participator increased the likelihood of attempting humor ($b = -.00, p < .001$) and having successful humor ($b = -.00, p < .001$). Interestingly, although being in an all-male group tends to decrease humor attempts, being male in mixed-sex groups increases rate of humor attempts ($b = -.26, p < .01$) and successes ($b = -.64, p < .001$). Dummy variables were created to control for time periods of the interaction. Interactions were divided into thirds and period two was omitted as the reference category. Turns that occurred in the first third of the interaction were more likely to include humor attempts ($b = -.33, p < .001$), and more successful humor attempts ($b = -.59, p < .001$). Turns that occurred in the last third of the interaction were not related to humor attempts ($b = -.03, ns$), but humor was less likely to succeed in the last third of the interaction ($b = .33, p < .001$). The scale coefficients are also significant for humor attempts and successes. These coefficients, however, cannot be interpreted the same way as in the Robinson and Smith-Lovin findings since a Weibull distribution implies a monotonic relationship between transition rate and duration, and the Log-normal distribution implies a nonmonotonic relationship (Blossfeld, Golsch, and Rohwer 2007).

Overlapping findings between the current study and Robinson and Smith-Lovin (2001) are shaded in Table 5.2. Many of the initial findings were not replicated and several new

findings were revealed in current analyses. The lack of complete replication is not all that surprising given the substantial methodological changes between studies. Robinson and Smith-Lovin's groups had six members, no formal roles, and a more amorphous task setting. The current groups only had three members, a clearer status structure, and a more well-defined task with stricter time limits. Additionally, interruption history was not coded in the current data, and thus, is not controlled for in the models.

The curious finding that prompted a reevaluation of the coding scheme was not replicated in the current analyses. All female groups did not exhibit the highest rates of humor. In an exploratory analysis of the data, I constructed a simpler model using number of females in the group to predict the wait-time of Robinson and Smith-Lovin attempts, Aikens attempts, and spontaneous laughter. If being a woman increases chances of laughter, but not overt attempts at humor, then we expect to see groups with more women having higher amounts of RSL attempts and spontaneous laughter, but no difference in Aikens' humor since Aikens' humor coding scheme separates instances of overt humor from instances where a turn was simply followed by laughter. The results of this analysis are presented in Table 5.3. As the number of women in a group increased, the shorter the wait time until RSL humor occurred ($b = -.12$, $p < .001$). This finding is similar to the pattern exhibited in Robinson and Smith-Lovin (2001). The results also show that when RSL humor is partitioned into Aikens humor and spontaneous laughter, the effect of number of women on humor is fully mediated. There was no significant effect for number of women on Aikens humor attempts ($b = .05$, $p > .05$). The number of women in a group did, however, have an effect on spontaneous laughter. As the number of women in a group increased, the shorter the wait-time (i.e. higher the rate) for spontaneous laughter ($b = -.33$, $p < .001$). These findings lend some credence to the notion that the Robinson and Smith-Lovin

finding may have been driven by the fact that women laugh more. Laughter is not separately accounted for in the RSL coding scheme, but instead subsumed within the category of humor attempts. It is clear that these coding schemes are detecting slightly different, but related phenomena. Now, I turn to a comparison of the coding schemes in an effort to decide which is more appropriate for testing the hypotheses in the current study.

Choosing a Coding Scheme

One goal of this project was to compare the previous coding scheme (RSL) to a new coding scheme (Aikens) and identify which one more usefully captures humor. Table 5.4 presents the results of this comparison. Again, the event history models presented in the table assume a Log-normal distribution with coefficients representing the effects of the covariates on the wait-time until humor. Overall, the coding schemes do not differ substantially.

Discrepancies between coding schemes are highlighted in red. Because there are a substantial number of significant findings in the models, I will try to summarize the overall important points. In general, the independent variables proved to be good predictors of humor attempts and successes, but less so for failures. Being male and being a high participator increased the rate of humor attempts and successes, and being a supervisor decreased the rate of humor attempts and successes in both RSL and Aikens coding schemes. Being in a group with male assistants was shown to significantly decrease rates of attempts, successes, and failures for the RSL coding scheme, but none of these relationships were significant in the Aikens coding scheme.

Furthermore, groups with male supervisors had decreased rates of attempts and failures for the RSL coding scheme but were unrelated in the Aikens coding scheme.

Of the six discrepancies between coding schemes in the models presented in Table 5.4, five showed that the RSL coding scheme detected patterns that the Aikens coding scheme did

not. For these five findings, groups with male assistants and male supervisor decreased the amount of RSL humor, but had no effect on Aikens humor. In other words, groups with these characteristics had fewer turns that inspired laughter, but were not related to the type humor that is discernible to external coders. While it is important to recognize that these two coding schemes are sensitive to slightly different phenomena, it is also important to acknowledge that they are highly related and tapping the same underlying constructs. Ultimately, the research is interested in how dynamic humor processes unfold across an interaction. These processes may not be entirely discernible to an external coder out of context. Because of this, I choose to employ the RSL coding scheme to test the previously stated hypotheses. It is important that this analysis investigates subtle and contextual types of humor in addition to humor that is overt.

In sum, the current research replicated several of the findings from Robinson and Smith-Lovin (2001). Additionally, when the data is coded with the Aikens coding scheme, there is evidence to suggest that the previous finding of all-women groups having the highest rates of humor may have been at least partially driven by the coding scheme. Despite their differences, both coding schemes are identifying highly related concepts and detect many of the same patterns. Because the current research is interested in how all types of humor are conditioned within interaction, I will use the RSL coding scheme in subsequent analyses which has broader, more inclusive definition of humor.

Table 5.1: Person-Level Means for Dependent Variables Across Types of Individuals and Groups

Variables	Overall	Men	Women	Supervisor	Assistants	Low Legitimacy	High Legitimacy	Flat Status Slope	Steep Status Slope
<i>Amount of Humor</i>									
RSL Attempted	12.37	12.14	12.21	12.35	12.40	14.07	10.03	16.87	13.14
RSL Successful	7.74	8.45	6.96	7.88	7.66	8.75	6.33	10.80	8.33
RSL Failed	4.74	3.82	5.32	4.56	4.83	5.43	3.77	6.13	4.86
Aikens Attempted	4.65	4.98	4.24	3.98	4.99	5.31	3.74	8.40	5.00
Aikens Successful	2.72	2.96	2.38	2.37	2.90	3.19	2.07	4.87	2.71
Aikens Failed	1.91	2.00	1.85	1.60	2.07	2.10	1.65	3.53	2.23
<i>Type of Humor</i>									
Cohesive	3.12	3.51	2.75	2.65	3.36	3.61	2.44	4.80	3.19
Differentiating	1.35	1.31	1.34	1.12	1.47	1.53	1.09	3.13	1.43
<i>Laughter</i>									
Spontaneous Laughter	6.48	4.86	7.65	7.21	6.20	7.44	5.28	7.13	6.38
<i>Controls</i>									
Total Words Spoken	893.97	909.76	880.56	950.12	865.90	892.69	895.74	907.20	909.81
N	129	49	79	43	86	75	54	15	21

Table 5.2: Results of an Event History Analysis Replicating Robinson and Smith-Lovin (2001): The Effects of Timing and Group and Speaker Characteristics on the Wait Time for Humor in Small Task Group Conversations (Standard Errors in Parentheses)¹

Independent Variables	All Humor	Successful Humor
Intercept	7.46*** (.12)	9.26*** (.17)
All Male	.85*** (.12)	.99*** (.16)
All Female	-.10 (.09)	.00 (.12)
Participation	-.00*** (.00)	-.00*** (.00)
Speaker Gender (Male)	-.26** (.09)	-.64*** (.12)
Period 1	-.33*** (.10)	-.59*** (.13)
Period 3	-.03 (.10)	.33** (.13)
Scale	.87*** (.02)	.99*** (.02)
Log likelihood for the Log-Normal	-6185.21	-4337.11

¹ Shaded indicates results that have been replicated from Robinson and Smith-Lovin (2001)

* p < .01 ** p < .01 *** p < .001

Table 5.3: Results of an Event History Analysis: The Effects of Number of Women on the Wait Time for Humor in Small Task Group Conversations (Standard Errors in Parentheses)

	<i>Type of Humor</i>		
	Robinson and Smith-Lovin Attempts	Aikens Attempts	Spontaneous Laughter
Number of Females	-.12*** (.03)	.05 (.06)	-.33*** (.05)
Log-likelihood	-6213.00	-3031.93	-3930.38

* $p < .01$ ** $p < .01$ *** $p < .001$

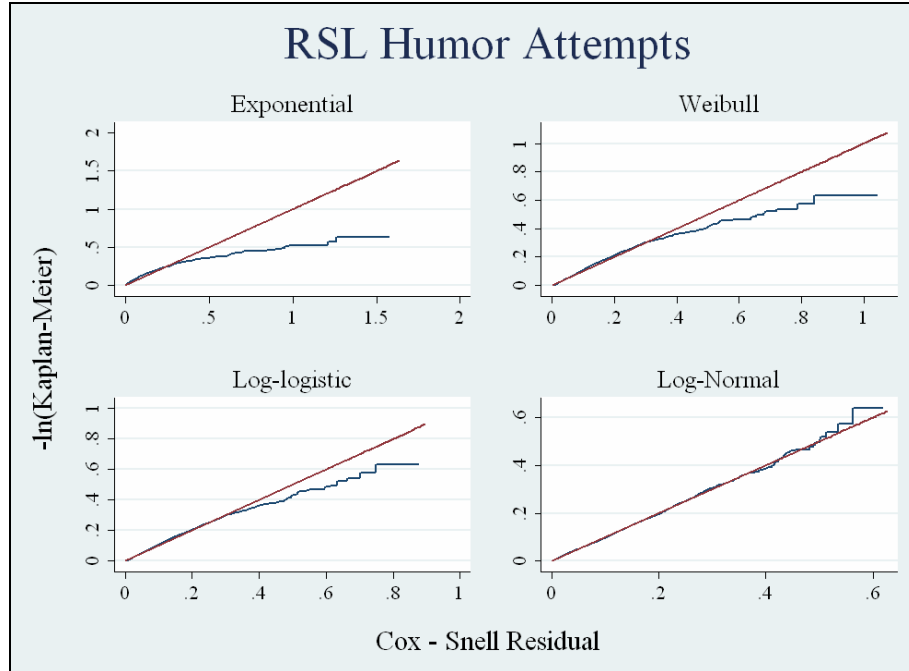


Figure 5.1: Testing Model Fit for RSL Humor Attempts

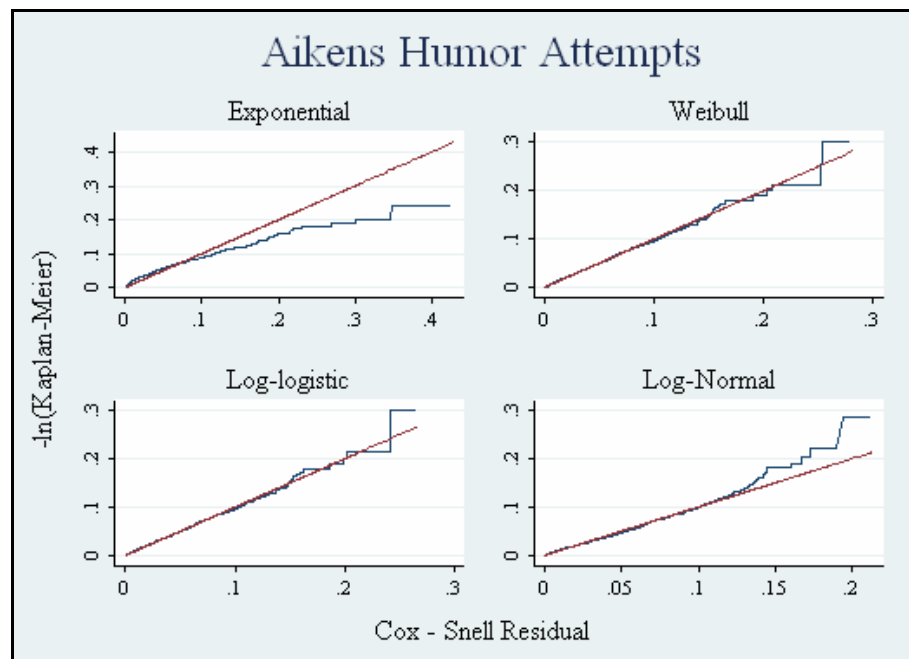


Figure 5.2: Testing Model Fit for Aikens Humor Attempts

Table 5.4: Results of an Event History Analysis Comparing the Effects of Individual and Group Characteristics on the Wait Time Until Humor Attempts, Successes, and Failures Across Coding Schemes (Standard Errors in Parentheses)¹

Independent Variables	RSL Attempts	Aikens Attempts	RSL Successes	Aikens Successes	RSL Failures	Aikens Failures
Intercept	4.19*** (.30)	6.19*** (.54)	4.59*** (.38)	5.99*** (.64)	6.24*** (.49)	7.88*** (.82)
Participation	-.00*** (.00)	-.00** (.00)	-.00*** (.00)	-.00* (.00)	-.00*** (.00)	-.00* (.00)
Male	-.39*** (.10)	-.40* (.18)	-.83*** (.13)	-.55* (.22)	.22 (.15)	-.04 (.25)
Supervisor	.29*** (.08)	.56*** (.14)	.37*** (.10)	.47** (.16)	.20 (.11)	.52** (.19)
Legitimacy	.73*** (.07)	.62*** (.13)	.78*** (.09)	.78*** (.16)	.71*** (.11)	.44* (.18)
Male Assistants	.58*** (.10)	-.32 (.18)	.62*** (.13)	-.19 (.21)	.44*** (.15)	-.39 (.25)
Male Supervisor	.36*** (.08)	.26 (.14)	.37*** (.10)	.55*** (.17)	.44*** (.12)	.03 (.19)
Conversation Duration	.39*** (.05)	.62*** (.08)	.57*** (.06)	.78*** (.10)	.40*** (.08)	.68*** (.12)
Scale	.84*** (.02)	1.14*** (.03)	.95*** (.02)	1.12*** (.04)	.96*** (.03)	1.17*** (.05)
Log likelihood for the Log-Normal	-6109.28	-2975.44	-4281.83	-1880.18	-2889.19	-1426.11

¹ Red indicates disagreement between coding schemes.

* p < .01 ** p < .01 *** p < .001

CHAPTER 6

RESULTS

Hypothesis Testing: Event History Analysis

The event history results are presented in Tables 6.1 and 6.2. As previously mentioned, it is important to consider the effects of the independent variables on the absolute levels and rates of the dependent variables. The results in Tables 6.1 and 6.2 investigate the effects of the covariates on wait-time until humor, and the models do not control for humor attempts. Despite the fact that they do not represent ideal tests of the hypotheses, I have retained them in order to have models that directly correspond to the HLM models that will be presented later in this chapter. These analyses are still discussed in light of the hypotheses, and will be referenced again in Chapter 8.

I now turn to testing specific hypotheses about how various person and group characteristics affect humor usage. As mentioned previously, the event history models used are hazard models specified with a lognormal distribution. The lognormal distribution models the rate of transition as a nonmonotonic function of waiting time (Blossfeld, Golsch, and Rohwer 2007; Hannan 1989). If we reverse the signs of the coefficients, then the results are interpreted as the covariate's effect on the *rate* of humor. Therefore, positive coefficients indicate a longer waiting time (i.e. slower transition rate) and negative coefficients indicate a shorter waiting time (i.e. faster transition rate). For each dependent variable of interest, there are two models presented. Both models include the individual-level predictors (participation, sex, and formal role). The first model entered the group level predictors separately (male assistants, male

supervisor, legitimacy), and the second model substituted these predictors for the composite variable of the status hierarchy slope.

Hypotheses 1 and 2 make predictions about what kinds of people/group structures will attempt to produce humor. Hypotheses 3 and 4 make predictions about what characteristics will affect the likelihood of successful humor. Hypotheses 5 through 8 make predictions about how person and group characteristics affect the type of humor is used. Because Hypotheses 3 through 8 are interested in the proportion of attempted humor that is successful, the proportion of humor that is cohesive, and the proportion of humor that is differentiating, then event history analysis will not provide a true test since these models will not control for the number of humor attempts. For example, it may be the case that being male increases humor attempts and humor successes. If, however, the models do not control for the number of humor attempts, then it is impossible to tell whether the proportion of successes has changed. These issues cannot be easily untangled within event history models. The true tests of these hypotheses will be addressed with hierarchical linear modeling, where the dependent variables will be proportions of attempts that are successful, cohesive, or differentiating. Even though many of results in the following models do not represent true tests of the hypotheses, I still present them because they will be used in the chapter on methodological comparison when trying to understand how much overlap/discrepancy there is between comparable models that use two different quantitative techniques.

Hypotheses 1a - 1c stated that high status individuals such as males (*a*), supervisors (*b*), and high participators (*c*) will be more likely to attempt humor than low status group members. Model 1 in Table 6.1 indicates mixed support for these hypotheses with males ($b = -.39, p < .001$)

and high participators ($b = -.00$, $p < .001$) being more likely to attempt humor and supervisors being less likely to attempt humor ($b = .29$, $p < .001$).

Hypotheses 2a and 2b stated that humor attempts will be inversely related to the clarity of the overall status structure. Hypothesis 2a stated that humor attempts will be fewer in high legitimacy conditions. As seen in Model 1 of Table 6.1, this hypothesis was supported with legitimacy decreasing the likelihood of humor attempts ($b = .73$, $p < .001$). Hypothesis 2b stated that as the status hierarchy slope steepens, humor will decrease. This hypothesis was supported as seen in Model 2 of Table 6.1 with humor attempts decreasing as the status hierarchy becomes steeper ($b = .19$, $p < .001$).

Hypotheses 3a – 3c stated that high status individuals such as males (a), supervisors (b), and high participators (c) will be more likely to have successful humor than low status group members. Results from Model 3 in Table 6.1 show that males are more likely than females to succeed ($b = -.83$, $p < .001$). Supervisors, however are significantly less likely to succeed at humor than assistants ($b = .37$, $p < .001$). Participation was significantly related to likelihood of humor success with high participators being more likely to have successful humor than low participators ($b = -.00$, $p < .001$).

Hypotheses 4a – 4b stated that successful humor will decrease as group structures become more clearly defined. Results from Table 6.1 indicate support for these hypotheses. Clarifying the formal structure of the group by having a legitimate leader decreased the rate of successful humor ($b = .78$, $p < .001$). Additionally, when the slope of the status hierarchy steepened and the group structure became clearer, successful humor decreased ($b = .20$, $p < .001$).

Hypotheses 5a – 5c stated that high status individuals such as men (a), supervisors (b), and high participators (c) will be less likely to use cohesive types of humor. Model 1 in Table

6.2 shows mixed support for these hypotheses. Hypothesis 5a was not supported with men being more likely than women to use cohesive humor ($b = -.73, p < .01$). Hypothesis 5b was supported with supervisors being less likely than assistants to use cohesive humor ($b = .67, p < .001$). Finally, Hypothesis 5c was not supported with high participators being more likely than low participators to invoke cohesive humor ($b = -.00, p < .01$).

Hypotheses 6a – 6c stated that high status individuals such as men (a), supervisors (b), and high participators (c) will be more likely to use differentiating types of humor. Model 3 in Table 6.2 supports none of these hypotheses. Men are not more likely than women to use differentiating humor ($b = .46, ns$) and supervisors are less likely than assistants to use differentiating humor ($b = .56, p < .05$). Additionally, high participators not significantly different from low participators in their usage of differentiating humor ($b = -.00, ns$).

Hypothesis 7a and 7b predict that cohesive humor will increase as status structures are clarified. Hypothesis 7a states that high legitimacy groups will have more cohesive humor than low legitimacy groups. Hypothesis 7b states that groups with steeper status hierarchy slopes will have more cohesive humor than groups with flatter slopes. Models 1 and 2 in Table 6.2 do not support these hypotheses. Cohesive humor actually decreases as status structures become clarified. Being in a high legitimacy group ($b = .77, p < .001$) or being in a group with a steeper status hierarchy slope ($b = .23, p < .001$) decreases the amount of cohesive humor.

Hypothesis 8a and 8b stated that differentiating humor would be lower in groups with clearer structures. Models 3 and 4 in Table 6.5 support these hypotheses. Model 3 shows that high legitimacy groups have decreased risk for differentiating humor ($b = .59, p < .05$). Model 4 shows that as the status slope increases (becomes more clarified), the risk of differentiating humor decreases ($b = .29, p < .001$).

Of the 20 sub-hypotheses, 13 were supported and 7 were not. Again, many of these findings should be interpreted with caution, since several of the models look at levels and not proportions. A summary of the predictions and findings is illustrated in Figure 6.1. A more detailed exploration of these findings is discussed in Chapter 7. A final set of analyses is now presented testing the hypotheses with hierarchical models.

Hypothesis Testing: Hierarchical Linear Modeling

Turn-level data was collapsed within person and dependent variables represent person-level humor counts. Event history models were replicated with a generalized linear model assuming a Poisson distribution with over-dispersion. Additional models were created to investigate the effects of covariates on the *rates* of the dependent measures. These models assumed a continuous distribution with over-dispersion since the rates success and cohesive/differentiating humor could range from .00 (0%) to 1.0 (100%). Four models were constructed for each dependent variable in a step-wise manner, beginning with a fully-unconditional baseline model (1), then adding in level-one predictors (2), and finally adding in level-two predictors into a random-intercept model (3 & 4). The third model adds in the separate group level covariates of legitimacy, male supervisor, and male assistants (3). The fourth model only adds the composite variable of status hierarchy slope (4). In total, there four tables presenting the results of the hierarchical models. Table 6.3 models the effect of the variables on absolute levels of humor attempts and successes (i.e. total number of attempts and successes). Table 6.4 models the effect of the variables on the rate of success (i.e. number of successes divided by number of attempts). Table 6.5 models the effects of the variables on absolute levels of cohesive and differentiating humor, and Table 6.6 models the effects on the rate of humor type. Models presented in Tables 6.3 and 6.5 were constructed for the purposes of

methodological comparison with the event history analyses, and the models presented in Tables 6.4 and 6.6 were constructed for hypothesis testing.

For each dependent variable of interest, I first ran a fully unconditional model and in order to calculate the Intraclass Correlation Coefficient (ICC). This value partials out the variance at each level to determine if HLM is an appropriate method (Kreft and De Leeuw 2004). The ICC specifies how much of variation in the dependent variable occurs at level two. For example, if the ICC is .01, then this means that 1% of the variation in Y occurs between groups. An ICC value this low would indicate that HLM is not necessary because there appears to be no substantial contextual effects. Although there is not a formal cutoff or a significance test associated with the ICC, a general rule of thumb is that the ICC be at least .05 to warrant HLM (Barcikowski 1981; Kreft and De Leeuw 2004). The ICC values for most all of the dependent variables indicate that HLM is an appropriate technique.

Models 1 through 4 in Table 6.3 present the individual level and group level effects on humor attempts. Model 1 presents the fully unconditional model. The Intraclass Correlation Coefficient is relatively low (.04) indicating that 4% of the variation in humor attempts occurs between groups. This is further illustrated by comparing the level-1 and level-2 variance components (from which the ICC is calculated).

Model 2 adds level-1 predictors of sex, role, and individual-level participation. Model 2 shows that being male is marginally positively associated with humor attempts ($b = .13, p < .10$). Formal role is not significantly associated with humor attempts ($b = -.02, ns$). Participation is significantly linked to humor attempts with high participators being more likely to attempt humor ($b = .06, p < .001$). The level-1 variance component in Model 2 (2.13) drops substantially

from Model 1 (3.15). In other words, adding the level-1 predictors into the model has accounted for nearly one-third (32.5%) of the level-one variance. After controlling for the level-1 predictors the ICC has increased to .11. This means that after controlling for individual level effects, 11% of the variation in humor attempts occurs between groups.

Model 3 incorporates the separate group level predictors of legitimacy, supervisor gender, and assistants' gender, and group-level participation into the model. Group-level participation controls for how much the group spoke as a whole. As seen in Model 3 of Table 6.3, individual-level participation is still significantly positively related to humor attempts. Being male becomes significant in Model 3 after group-level effects are included. Males are more likely than females to attempt humor ($b = .19, p < .05$). The group-level predictors show that high legitimacy decreases the number of humor attempts ($b = -.41, p < .05$). The variance components comparing Models 2 and 3 show that adding group level predictors reduced the level-2 variance component by 16%. The ICC has been reduced from 11% to 9%. The level-2 variance component is still significant which indicates that a significant amount of variation between groups remains unexplained by level-1 and level-2 predictors.

Model 4 substitutes the separate group predictors for the composite predictor of status hierarchy slope. In the current Model, gender falls out of significance after clarity of structure is controlled for ($b = .14, ns$) and individual participation continues to be positively associated with humor attempts ($b = .06, p < .001$). Similarly to the effect of legitimacy in Model 3, steepening the slope of the status hierarchy also decreases the event rate of humor ($b = -.11, p < .05$). The variance components of Models 3 and 4 indicate the same amount of level-2 variance explained.

With regard to specific hypotheses made about effects of individual and group-level characteristics on humor attempts, Hypothesis 1 stated that high status group members will use

more humor than low status group members. Being a supervisor is not significantly related to humor attempts in any of the models. There is a positive effect of being male on humor attempts in models 2 and 3, but not in Model 4 when the status slope variable is included. Hypothesis 2 stated that clarifying the status structure of a group will decrease humor attempts. This hypothesis was supported with both legitimacy and status slope significantly decreasing the count of humorous attempts. In sum, there is mixed support for the hypothesized relationship between status and humor attempts and strong support for the hypothesized relationship between group structure and humor attempts.

Models 5 through 8 in Table 6.3 investigate the effects of individual and group-level predictors on the count levels of successful humor. In all of these models, the ICC indicates that there is enough between-group variation to merit HLM techniques. In all models with level-1 predictors (Models 6, 7, & 8), being male and participation are significantly and positively related to humor successes with men and high participators having more instances of successful humor. Formal role was not related to humor success in any model. Models 7 shows that increasing the level of legitimacy decreases the event rate of successful humor ($b = -.42, p < .05$). Additionally, having male assistants in a group decreases rate of success ($b = -.39, p < .05$). Model 8 shows that increasing the slope of the status hierarchy has a marginal negative effect on humor success ($b = -.11, p < .10$). The variance components across all models indicate there is more variation in humor success at level-1 (between persons) than level-2 (between groups). Also, there is a substantial amount of level-1 variation accounted for when level-1 predictors were added (comparing Models 5 and 6). In fact, almost half of the variation (46%) between persons is accounted for when group level-predictors were added.

Models 1 through 4 in Table 6.4 investigate the effects of individual and group-level predictors on the rate of humor success (i.e. controlling for attempts). As seen across all models, being male and being a high participator increase the increase the rate of success. Formal role did not significantly relate to success rate. Despite the fact that there is substantial amount of variation at the group level (16-20%), none of the level-2 covariates successfully explained any of this variation.

Hypotheses 3 stated that high status group members' humor will be more likely to succeed at humor than low status group members'. Being a high participator and being male (both indicators of high status) corresponded to more instances and higher rates of successful humor. Being a supervisor, however, was not significantly related to levels or rates of humor success in any of the models. Hypothesis 4 stated that successful humor will decrease as group structures become more clearly defined. Legitimacy was shown to significantly decrease amount of successful humor, and status slope had a marginally negative significant effect on successful humor. Overall, the models indicate mixed support for Hypotheses 3 and 4.

Models 1 through 4 in Table 6.5 investigate the effects of individual and group-level predictors on the *count* of cohesive humor. The Intraclass Correlation Coefficient in the fully unconditional model reveals that roughly 10% of the variation in cohesive humor occurs between groups. In every model with person-level predictors, sex and participation are related to cohesive humor, with males and high participators being more likely to use cohesive humor. Although being a supervisor is marginally negatively related to producing cohesive humor, this effect is no longer significant when group-level predictors are added to the model. Models 3 and 4 in Table 6.5 show the effects of group-level predictors on cohesive humor. High legitimacy

groups ($b = -.43$, $p < .05$) and groups with steeper status hierarchy slopes ($b = -.11$, $p < .10$) show decreased counts of cohesive humor.

Models 1 through 4 in Table 6.6 investigate the effects of individual and group-level predictors on the *rate* of cohesive humor used. Sex falls in and out of significance with men having a significantly higher (or marginally significant) rate of cohesive humor. Additionally, participation at the individual ($b = .02$, $p < .01$) and group level ($b = .00$, $p < .01$) increase the rate of cohesive humor. No other covariates significantly predict rate of cohesive humor. In fact, the ICC values are too low to merit using hierarchical linear models since there is not much variation between groups in the rates of cohesive humor used.

Hypotheses 5 and 7 speculated about the relationship between cohesive humor and individual and group-level variables. Hypothesis 5 stated that low status individuals will be more likely to use cohesive humor than high status individuals. Results in Table 6.5 show that contrary to Hypothesis 5, high status group members such as men and high participators have higher count of cohesive humor. When controlling for the amount of humor attempts (Table 6.6), men also have higher *rates* of cohesive humor. High participators have higher counts and rates of cohesive humor. Model 1 in Table 6.5 indicates a marginal negative effect for supervisor which means that supervisors are less likely to use cohesive humor than assistants. This finding, however, does not hold across models. Hypothesis 7 stated that cohesive humor will increase as the clarity of the status structure increases. This hypothesis was not supported. Clarifying the status structure decreased the amount, but not the rate of cohesive humor with legitimate groups (Model 11) and groups with steeper status slopes (Model 12) had lower rates of cohesive humor. Overall, there was no support for the hypothesized relationship between cohesive humor and various individual and group-level characteristics.

Models 5 through 8 in Table 6.5 investigate the effects of individual and group-level predictors on the event rate of differentiating humor. The ICCs for these models indicate that between 18% and 22% of the variation in differentiating humor occurs between groups, which justifies utilizing HLM techniques. As seen in Model 7, groups with male assistants are significantly more likely to experience differentiating humor ($b = .65, p < .05$). Additionally, Model 8 shows that groups with steeper status hierarchy slopes have decreased counts of differentiating humor ($b = -.15, p < .10$). Despite not having very many significant predictors in the models for differentiating humor, the composite slope variable is able to account for nearly 20% of the level-2 variance (from Model 14 to 16).

Models 5 through 8 in Table 6.6 investigate the effects of covariates on the *rate* of differentiating humor. While there is a significant amount of variation in the rate at the group level as evidenced by the ICCs, none of the models explain a substantial proportion of this variation. There are only two significant predictors across all models and they are both within Model 7. Specifically, being male decreases the rate of differentiating humor and being in a group with male assistants increases the rate of differentiating humor. Neither of these relationships was predicted in the hypotheses and the effect of being male is not significant in Models 6 or 8.

Hypotheses 6 and 8 make predictions about the relationship between individual and group characteristics on use of differentiating humor. Hypothesis 6 stated that high status individuals will be more likely than low status individuals to use differentiating humor. Hypothesis 8 stated that clarity of the status structure will be inversely related to differentiating humor such that increasing the clarity of the group structure should decrease the amount of differentiating humor. Overall, neither of these hypotheses was supported. None of the

individual-level predictors were significantly related to differentiating humor in any of the models. Additionally, the overall clarity of the status structure was not related to differentiating humor in predicted way. Legitimacy was not significantly related and status slope was only marginally related, but in the opposite direction from what was hypothesized. In sum, the hypothesized relationship between differentiating humor and individual/group characteristics was not supported in the HLM analyses.

The next two chapters will be devoted to making sense of the findings both substantively and methodologically. Chapter 7 will discuss the findings as they pertain to the hypotheses in an attempt to develop a theory of humor as a group process. Chapter 8 will compare the results from each set of analyses and discuss the implications of overlapping and/or discrepant findings.

Table 6.1: Hypothesis Testing: Using Event History Analysis to Test the Effects of Individual and Group Characteristics on the Wait Time Until RSL Humor Attempts and Successes in Small Group Conversations (Standard Errors in Parentheses)

Independent Variables	RSL Attempts		RSL Successes	
	(1)	(2)	(3)	(4)
Intercept	4.19*** (.30)	4.05*** (.31)	4.59*** (.38)	4.44*** (.39)
Participation	-.00*** (.00)	-.00*** (.00)	-.00*** (.00)	-.00*** (.00)
Male	-.39*** (.10)	.09 (.07)	-.83*** (.13)	-.31*** (.09)
Supervisor	.29*** (.08)	.21** (.07)	.37*** (.10)	.24* (.09)
Legitimacy	.73*** (.07)	-	.78*** (.09)	-
Male Assistants	.58*** (.10)	-	.62*** (.13)	-
Male Supervisor	.36*** (.08)	-	.37*** (.10)	-
Conversation Duration	.39*** (.05)	.39*** (.05)	.57*** (.06)	.58*** (.06)
Steeper Status Hierarchy	-	.19*** (.02)	-	.20*** (.03)
Scale	.84*** (.02)	.85*** (.02)	.95*** (.02)	.96*** (.02)
Log likelihood for the Log-Normal	-6109.28	-6144.19	-4281.83	-4305.40

* p < .01 ** p < .01 *** p < .001

Table 6.2: Hypothesis Testing: Using Event History Analysis to Test the Effects of Individual and Group Characteristics on the Wait Time Until Various Types of Humor in Small Group Conversations (Standard Errors in Parentheses)

	Cohesive		Differentiating	
	(1)	(2)	(3)	(4)
Intercept	6.45*** (.66)	6.04*** (.67)	8.78*** (1.05)	8.20*** (1.07)
Participation	-.00** (.00)	-.00** (.00)	-.00 (.00)	-.00 (.00)
Male	-.73** (.22)	-.56*** (.16)	.46 (.32)	-.03 (.23)
Supervisor	.67*** (.17)	.62*** (.17)	.56* (.25)	.54* (.25)
Legitimacy	.77*** (.16)	-	.59* (.23)	-
Male Assistants	.03 (.22)	-	-1.10*** (.32)	-
Male Supervisor	.25 (.17)	-	.36 (.25)	-
Conversation Duration	.76*** (.10)	.76*** (.10)	.74*** (.15)	.73*** (.15)
Steeper Status Hierarchy	-	.23*** (.05)	-	.29*** (.07)
Scale	1.20*** (.04)	1.20*** (.04)	1.29*** (.06)	1.30*** (.06)
Log likelihood for the Log-Normal	-2163.96	-2165.24	-1071.06	-1076.10

* $p < .01$ ** $p < .01$ *** $p < .001$

Hypotheses	Supported in Event History Models?
<i>Attempts</i>	
1a (+) Male	Yes
1b (+) Supervisor	No, (-) Supervisor
1c (+) Participation	Yes
2a (-) Legitimacy	Yes
2b (-) Steeper Status Hierarchy	Yes
<i>Successes**</i>	
3a (+) Male	Yes
3b (+) Supervisor	No, (-) Supervisor
3c (+) Participation	Yes
4a (-) Legitimacy	Yes
4b (-) Steeper Status Hierarchy	Yes
<i>Cohesive**</i>	
5a (-) Male	No, (+) Male
5b (-) Supervisor	Yes
5c (-) Participation	No, not significant
7a (+) Legitimacy	Yes
7b (+) Steeper Status Hierarchy	Yes
<i>Differentiating**</i>	
6a (+) Male	No, not significant
6b (+) Supervisor	No, (-) Supervisor
6c (+) Participation	No, not significant
8a (-) Legitimacy	Yes
8b (-) Steeper Status Hierarchy	Yes
**These findings do not represent true tests of the hypotheses since they model absolute levels, and do not control for the amount of humor.	

Figure 6.1: Summary of Hypotheses and Event History Findings

Table 6.3: HGLM Poisson Regression of Humor Attempts and Successes on Various Person-level and Group-level Characteristics

	RSL Humor Attempts			RSL Humor Successes				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	2.51***	1.84***	1.58**	1.03*	2.03***	.96***	.73	.17
Person-Level Characteristics								
Male		.13†	.19*	.14		.39***	.46***	.37***
Supervisor		-.02	-.03	.78		-.04	-.05	-.03
Participation		.06***	.06***	.06***		.09***	.09***	.09***
Group-Level Characteristics								
High Legitimacy			-.41*				-.42*	
Male Assistants			-.30†				-.39*	
Male Supervisor			-.22				-.25	
Participation			.00	.00			.00	.00
Steeper Status Hierarchy				-.11*				-.11†
Random Effect								
	Variance Component							
Level-1, τ_{ij}	3.15	2.13	2.09	2.12	3.12	1.69	1.68	1.68
Level-2, Intercept, μ_{00}	.14***	.25***	.21***	.23***	.17***	.38***	.34***	.37***
Intraclass Correlation	.04	.11	.09	.09	.05	.18	.20	.18

† p < .10 * p < .01 ** p < .01 *** p < .001

[†] $p < .10$ * $p < .01$ ** $p < .01$ *** $p < .001$

Table 6.4: HGLM Poisson Regression of Humor Success Rate on Various Person-level and Group-level Characteristics

	<i>RSL Success Rate</i>			
	(1)	(2)	(3)	(4)
Intercept	.59***	.36***	.24	.23
<i>Person-Level Characteristics</i>				
Male		.13**	.13*	.13**
Supervisor		.02	.02	.02
Participation		.02***	.02***	.02***
<i>Group-Level Characteristics</i>				
High Legitimacy			-.01	
Male Assistants			-.02	
Male Supervisor			.02	
Participation			.00	.00
Steeper Status Hierarchy				.00
<i>Random Effect</i>				
Level-1, r_{ij}	.05	.04	.04	.04
Level-2, Intercept, μ_{00}	.01**	.01**	.01***	.01**
Intraclass Correlation	.16	.20	.22	.21

* $p < .01$ ** $p < .01$ *** $p < .001$

Table 6.5: HGLM Poisson Regression of Humor Type on Various Person-level and Group-level Characteristics

	Cohesive Humor			Differentiating Humor				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	1.00***	.36 [†]	-.34	-.91 [†]	.24*	.11	.14	-.61
Person-Level Characteristics								
Male		.41**	.47*	.35**		-.13	-.37	-.17
Supervisor		-.27 [†]	-.28	-.25		-.23	-.36	-.23
Participation		.07***	.07***	.07***		.02	.03	-.04
Group-Level Characteristics								
High Legitimacy			-.43*				-.32	
Male Assistants			-.22				.65*	
Male Supervisor			.38				-.57	
Participation			.00*	.00 [†]			-.00	.00
Steeper Status Hierarchy				.11 [†]				-.15 [†]
Random Effect								
	Variance Component							
Level-1, τ_{ij}	1.94	1.60	1.55	1.54	1.15	1.09	1.13	1.14
Level-2, Intercept, μ_{00}	.20***	.28***	.24***	.24***	.26***	.31***	.24***	.25***
Intraclass Correlation	.10	.15	.13	.13	.18	.22	.18	.18

[†] p < .10 * p < .01 ** p < .01 ***p < .001

[†] p < .10 * p < .01 ** p < .01 *** p < .001

Table 6.6: HGLM Poisson Regression of Rate of Humor Type on Various Person-level and Group-level Characteristics

	<i>Rate of Cohesive Humor</i>				<i>Rate of Differentiating Humor</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	.61***	.40***	.11	.20	.28***	.40***	.50**	.41*
<i>Person-Level Characteristics</i>								
Male		.12 [†]	.18*	.11 [†]		-.06	-.17*	-.07
Supervisor		-.09	-.10	-.08		.01	.03	.01
Participation		.02*	.02*	.02*		-.01 [†]	-.01	-.01
<i>Group-Level Characteristics</i>								
High Legitimacy			.01				-.00	
Male Assistants			-.14				.23**	
Male Supervisor			.00				.03	
Participation			.00*	.00 [†]			-.00	-.00
Steeper Status Hierarchy				-.01				.02
<i>Random Effect</i>								
Level-1, r_{ij}	.12	.11	.11	.11	.08	.08	.08	.08
Level-2, Intercept, μ_{00}	.00	.00	.00	.00	.01	.01	.01	.01 [†]
Intraclass Correlation	.00	.04	.02	.02	.07	.09	.07	.10

[†] $p < .10$ * $p < .01$ ** $p < .01$ *** $p < .001$

Hypotheses	Supported in HLM?
<i>Attempts</i>	
1a (+) Male	Yes
1b (+) Supervisor	No, not significant
1c (+) Participation	Yes
2a (-) Legitimacy	Yes
2b (-) Steeper Status Hierarchy	Yes
<i>Rate of Successful Humor</i>	
3a (+) Male	Yes
3b (+) Supervisor	No, not significant
3c (+) Participation	Yes
4a (-) Legitimacy	No, not significant
4b (-) Steeper Status Hierarchy	No, not significant
<i>Rate of Cohesive Humor</i>	
5a (-) Male	No, (+) Male
5b (-) Supervisor	No, not significant
5c (-) Participation	No, (+) Participation
7a (+) Legitimacy	No, not significant
7b (+) Steeper Status Hierarchy	No, not significant
<i>Rate of Differentiating Humor</i>	
6a (+) Male	No, not significant
6b (+) Supervisor	No, not significant
6c (+) Participation	No, not significant
8a (-) Legitimacy	No, not significant
8b (-) Steeper Status Hierarchy	No, not significant

Figure 6.2: Summary of Hypotheses and HLM Findings

CHAPTER 7

SUBSTANTIVE DISCUSSION

How can we make sense of the findings presented in Chapter 5 and 6? In an attempt to answer this question, I will assess the findings as they relate to the major research questions presented in the beginning of this paper. Substantively, the goals of this paper were to replicate Robinson and Smith-Lovin (2001), develop a new coding scheme, and to further understand how humor in small group interaction is affected by individuals' statuses and the status structure of the group as a whole. In an effort to address each of these points, I will first describe how these findings are similar to the results of Robinson and Smith-Lovin (2001). Second, I will summarize the findings from the coding scheme comparison. Third, I will summarize the novel contributions this study offers to the conversation on gender, status, and humor.

The current research was largely inspired by Robinson and Smith-Lovin (2001), and it provided opportunities to (1) replicate their results (2) formally test their propositions. In regard to replication, the current study overlapped with Robinson and Smith-Lovin (2001) in four ways. Being male in a mixed-sex group increased the amount of humor attempts and successes. Being a high participator increased the rate of successes. Finally, the humor rate was higher at the beginning of the conversation. These findings further confirm the notion that humor is conditioned by individual characteristics as well as temporal dynamics of the conversation. In addition to the overlap, there were also several new patterns that emerged. Most notably was the finding that all-male groups were less likely to use humor than mixed-sex groups. It is not surprising, however, that several patterns depart from those previously seen. Group interactions

were very different across the two studies. In the Robinson and Smith-Lovin interactions, groups had six equal status members, and the sex-ratio varied from all-males to all-females (and every possibility in between). The task in the original study was far less structured, and groups were given more time to reach the goal. Given the substantial effects of group structure on humor in the current study, it is not hard to imagine that the substantial design changes to group structures between the two studies altered the group dynamics and subsequent interaction. Findings that were replicated may represent robust social processes that characterize humor in these types of interactions (i.e. small, task focused groups composed of relative strangers).

Across these two studies, there are several points of overlap worth noting. First of all, both gender and status were significant predictors across the studies. In both studies, being male in a mixed-sex group increased the likelihood of humor use and success. Participation was also related to humor positively for humor attempts (current study) and humor success (both studies). And while Status Characteristics Theory often explains gender differences in terms of status differences, some of the results cannot be explained away as status processes. For example, compared to mixed-sex groups, all-male groups used significantly less humor (current study) and all-female groups used significantly more humor (RSL). While these findings indicate gender effects, they do not completely align with the previous body of literature on gender and humor.

Previous work on gender and humor concluded that men appreciate humor and joke more than women (Brodzinsky, Barnet, and Aiello 1981; Crawford 1989; Crawford 1992; Crawford 1995; Crawford and Gressley 1991; Marlowe 1989; Mundorf et al. 1988). While this pattern was found in mixed-sex groups, it did not hold for all-male groups. If men are more prone to humor, then we should expect to see that groups with more men to have an increased rate humor. Instead, however, all-male groups are significantly less likely to attempt humor. Robinson and

Smith-Lovin found the reverse effect for women. They found that women in mixed-sex groups are less likely than men to use humor, but all-female groups are more likely than mixed-sex groups to use humor. Taken together, these differences indicate that the gender effect may be partly due to the cultural differences (Crawford 2003; Maltz and Borker 2007) and partly due to status processes (Berger 1972). The perplexing finding of all-female groups having the most humor in Robinson and Smith-Lovin begged further investigation. This finding goes against the body of research that insists men are the jokesters in interaction. In the current study, I devised a new coding scheme in an effort to see whether this finding was merely an artifact of coding scheme.

I implemented the old (RSL) and new (Aikens) coding schemes. The RSL coding scheme precluded the possibility of random laughter that was unaccompanied by a humor attempt. In other words, any time an individual laughed, it was assumed to follow a humorous attempt. Laughter, however, is not always a response to humor. Individuals may nervously laugh, or laugh at their own thoughts. Additionally, there is research showing gender differences in the amount of laughter men and women exhibit (Dovidio et al. 1988). In the Aikens coding scheme, every instance of laughter that was not tied to a coded humor attempt was recoded into a new category of spontaneous laughter. In the RSL coding scheme, the possibility of making a type-I error with regard to coding successful humor was much higher than in the current coding scheme. The new coding scheme was developed to (1) reduce the number of false positives with regard to humor attempts/successes (2) account for the unusual finding that all-female groups were most prone to humor.

Despite the relatively substantial changes were made to the coding scheme, there was more overlap than discrepancy in how they portrayed the effects of independent variables on

dependent variables. For most of the discrepancies, results that were significant in RSL scheme were rendered insignificant with the Aikens coding scheme. This indicates that the coding schemes reveal many of the same underlying processes, despite emphasizing slightly different constructs. The main purposes of the new coding scheme was to determine if the Robinson and Smith-Lovin's findings regarding all female groups could have merely been to their increased use of spontaneous laughter rather than successful humor. While there was no evidence of replicating this finding in the full models, a simplified model did show that RSL humor was a function of how many women were in the group. Additionally, this effect was fully-mediated when RSL attempts were separated into Aikens attempts and spontaneous laughter. This finding provides some support for the notion that the previous finding may have been at least partially driven by the RSL coding scheme. Ultimately, I decided to utilize the RSL coding scheme hypothesis testing because of its more inclusive definition, but the Aikens' coding scheme may be useful for investigating particular relationships.

Overall, there are several aspects of this study that confirm previous understandings of the relationship between the gender, status, and humor. First, despite many changes to the experimental design and coding scheme, men were still more likely than women to joke. Not only did men have higher levels of success, they are proportionately more successful once controlling for attempts. This falls in line with the many studies cited earlier that document differences between amount of humor men and women use. Similar to Robinson and Smith-Lovin, however, humor is not only conditioned by socialization differences, but status processes as well. If these differences were only due to cultural differences between men and women (Maltz and Borker 2007), then we would expect the same patterns to hold for men and women in same-sex groups. These differences do not hold when comparing same-sex groups, indicating

that status processes might also be an influential force in shaping humor use. In sum, socialization and status processes influence how humor is used in interaction by men and women.

Aside from replication, another goal of this project was to extend a group process theory of humor beyond its reach in the Robinson and Smith-Lovin version. This was done in two main ways. First, formal status was manipulated through authorization by an experimenter. This allowed me to experimentally test previous studies' findings in which leaders are perceived to use humor more than their subordinates. Second, legitimacy structures were also experimentally manipulated, allowing me to extend Robinson and Smith-Lovin's theory, and hypothesize about the effect of groups' overall structure on humor. Both of these manipulations were novel to the current study.

The formal status manipulation of assigning members to be assistants versus supervisors had some interesting consequences for humor use. In Robinson and Smith-Lovin, groups consisted of peers, and leaders most likely emerged as they did in Bales' studies: through endogenous processes. With the previous design, and similar to the problem encountered in other studies on status and humor, it is impossible to know if individuals who ascend to power are then more likely to use humor, or if individuals ascend to power because they use more humor. The current study alleviates this issue of causal ordering, revealing an interesting pattern between formal status and humor.

Contrary to many previous studies citing the positive relationship between status and humor (Abramis 1992; Collinson 2002; Coser 1960; Rizzo, Wanzer, and Booth-Butterfield 1999), the results of this study found either a negative (event history analysis), or a non-significant relationship (HLM) between formal status and humor. According to the event history

analyses, being a leader decreases the chance of using humor compared to assistants. This finding contradicts most of the literature regarding the relationship between status and humor. This study may provide preliminary evidence that humor is not necessarily a characteristic associated with leadership where individuals who ascend to positions of authority automatically adopt it (humor) as a leadership tactic. If this were the case, then individuals who were assigned to be supervisors would have utilized humor more than subordinates. Instead, it may be the case that individuals who utilize humor are more likely to ascend power. It is also possible that the perceived differences between the humor use of leaders and subordinates are due to perceptions only and not rooted in reality. Further investigation is needed before any conclusive statements can be made about the relationship between status and humor, but the current results suggest that assigning an individual a high status role does not influence humor behavior in the predicted direction (event history), and perhaps not at all (HLM).

The second novel contribution of this study was to incorporate a structural component to Robinson and Smith-Lovin's previous instantiation of a group process theory of humor. The main question of interest was: How does group structure affect type and amount of humor used? The clarity of the status structure was tapped by two constructs: legitimacy and slope of the status hierarchy. Legitimacy is a gross measure of the clarity of the status structure. This manipulation resulted in high and low legitimacy conditions in which assignment to role was given based on qualifications (at least presumably) or at random. The other measure of structural clarity used information about formal status (legitimacy) and informal status (gender of leader relative to assistants), which resulted in a more nuanced measure of clarity. For both constructs, and across both methods of analysis, it is clear that the clarity of the group structure is important in determining the amount and type of humor used. More specifically, humor attempts, humor

successes, cohesive humor, and differentiating humor tapered substantially when comparing low legitimacy groups to high legitimacy groups and as the slope of the status hierarchy steepened. This finding could be interpreted in one of two ways. First, if humor is a way to negotiate status hierarchies (as proposed here), then this finding implies individuals do not use humor in unambiguous groups because there is no room for renegotiating the structure. On the other hand, if humor is a reflection of general enjoyment, then it is possible that groups with a less formalized structure are simply more fun. While I have used theory to defend this former claim, there is no way to untangle these complexities without more information. One way to investigate this would be to evaluate the post-session questionnaires where participants rate their feelings about group members and the overall efficacy of the task. This analysis would be able to control for the amount of humor used over the course of the interaction and see how this corresponded to perceptions of other group members. If humor is simply a reflection of a relaxed and enjoyable group dynamic, then individuals in ‘high humor’ groups should report feelings of happiness and satisfaction. If humor is a reflection of status organizing processes, then individuals may report negative feelings of group interaction including anxiousness and unease. This debate requires additional investigation outside the scope of the current project.

In sum, the current study investigated how gender, formal role, participation, and the clarity of the status structure influenced humor use in task-focused group. Humor behavior is not the same across all markers status. Generally, men and high participators joke and succeed more compared to women and low participators. Both of these findings were consistent with the hypotheses. Formal role, which has been discussed extensively in the literature as a characteristic that increases the likelihood of humor, is unrelated to humor at best, and at worst, related in the opposite direction. It is possible that individuals can only ‘loosen up’ with humor

once legitimated in their role. Perhaps the groups in the current study did not have enough time to acclimate to their roles. Additionally, these groups are relatively unnatural in many respects compared to interactions that occur at work or between friends. One prominent finding across models for both methods was that clarifying the status structure decreased the amount of humor. From this preliminary exploration, it is impossible to detect whether this is due to the fact that unstructured groups need negotiating, or whether unstructured groups are just more fun. The individual characteristics are most likely not related to interactional processes as a monolithic force. Instead, more theorizing should be done in a vein similar to Lovaglia et al (2008) in which characteristics such as gender, status, and legitimacy are believed to relate to humor and other interactional processes in complex ways.

CHAPTER 8

METHODOLOGICAL COMPARISON

A goal of the current research was to explore methodological differences between two different statistical methods: event history analysis and hierarchical linear modeling. Each of these methods is equally appropriate and inappropriate for different reasons. Event history analysis is ideal for investigating questions of how the unfolding of time and the unique accumulation of characteristics affects the likelihood of an event occurring (Carroll 1983; Hannan 1989). In this case, event history analysis is able to account for individuals' humor and participation histories to predict the likelihood of using humor in a given turn. This method ignores an important and necessary assumption. In the case of the current data, talking turns do not exist independently from one another. Instead, each turn is nested within an individual, and each individual is nested within a group. Ignoring this lack of independence can introduce statistical bias (Kenny and Judd 1986) which could lead to false conclusions. Hierarchical linear modeling techniques were devised as way to statistically account for the problems associated with nested data. And while HLM is able to account for the lack of independence, it does so at the expense of the temporal information. For example, humor was found to be contagious in Robinson and Smith-Lovin (2001). This means that the rate of humorous utterances increased over the course of the interaction. Subtle time-dependent information such as this is lost in hierarchical models. Each of these methods is adept at answering different types of questions, but it is still unclear if results are compromised due to their different underlying assumptions and

emphases. Therefore, a goal of this project was to investigate whether employing one of these methods over the other had any substantial implications as to what patterns emerged.

Throughout Chapter 6 and 7, the results revealed many differences between findings obtained from each of the respective methods. Some of these differences were due to the fact that the models themselves differed (some predicted levels and others predicted rates). Other differences are due to the statistical calculations used by each method. The first issue is not as much of a concern since some methods are better adept at answering particular kinds of questions. Specifically, temporal information can only be obtained through event history analysis and information about the proportion of humor that is successful can only be obtained through hierarchical linear models. For these issues, research questions determine methodological choice. In other instances, however, the same research question can be approached in a multitude of ways. The current chapter is interested in cases such as these. Specifically, how do comparable models, constructed with different methodologies, vary in the results exhibited? To test this I created models that were as comparable as possible using each method. Using the models in Table 6.1 (event history: levels of attempts and successes), Table 6.2 (event history: levels of cohesive and differentiating), Table 6.3 (HLM: levels of attempts and successes), and Table 6.5 (HLM: levels of cohesive and differentiating), I created a figure that depicts how the results from event history analysis and hierarchical linear models overlap with and diverge from one another. In Figure 8.1, I show how each one of the six independent variables relates to each of the four dependent variables for each of the respective methods. The figure succinctly summarizes the 48 findings. In cases of step-wise model construction where there was a possibility for effects to be present/absent across models, I entered whatever finding was most common across models. For example, in Table 6.3, the effect of being male on attempts is

marginally significant in Model 2, significant at the .05 level in Model 3, and not significant in Model 4. In two of the three models, being male is at least marginally positively related to attempts. Therefore, I depict the ‘overall’ relationship as significant and positive. In sum there are 24 relationships being investigated. Figure 8.1 shows that of these 24 relationships, the methods agree more than they disagree. Specifically, dependent variables are depicted in columns, and independent variables in rows. Each of the potential relationships between an independent and dependent variable is designated by a block that is divided into two halves, one for each method of analysis. Within each half, + and – symbols represent the direction of the relationship (blanks indicate lack of statistical significance). With three potential types of relationships for each of the two methods, there are six different ways for the methods to disagree (1) + / – (2) – / + (3) +/ns (4) ns/+ (5) –/ns (6) ns/– and three ways for the methods to agree (1) ++ (2) -- (3) ns/ns. In Figure 8.1 the discrepant findings between methods are shaded.

As seen in Figure 8.1, of the 24 relationships between independent and dependent variables, results from event history analysis and hierarchical linear modeling agreed in their findings for 17 of the relationships. In other words, regardless of methodological choice, the same results were obtained 71% of the time. For the other 7 relationships, there was a disagreement between the methods in their findings. Of the 7 relationships where there was a disagreement between event history results and HLM results, all of the discrepancies were due to event history analysis detecting a relationship that HLM did not detect. In other words, after HLM accounts for the nested nature of the data, 9 of previously significant findings become insignificant. Upon closer investigation of the tables used to construct Figure 8.1, however, it appears that all of the coefficients for the insignificant findings in the HLM analyses are in the

same direction as the significant findings in the event history results. In other words, these methods are picking up the same patterns, but HLM is more conservative in what it is willing to deem a significant result.

There are several noteworthy points regarding the methodological comparison between event history and HLM analyses. First, it is reassuring that many of the findings were identical across methods. Given the agreement between methods on the effects of being male and legitimacy on humor, I can confidently say that being male increases humor attempts, successes, and cohesive humor, but has no effect on differentiating humor. Additionally, I can also say with confidence that clarifying the status structure in the form of legitimacy through authorization decreases humor attempts, successes, and cohesive humor. These findings were robust across models and statistical techniques.

A second noteworthy point with regard to this methodological comparison is that method choice did matter for a substantial proportion of the relationship. Ignoring the independence assumption clearly affected which relationships became significant. Specifically, employing a method that ignores this assumption increases one's chances of making a Type I error. For example, the event history analyses depicted the role of supervisor as having a strong and negative effect on amount and type of humor used. This effect, however, is not significant when contextual effects of groups are accounted for.

The results of this comparison beg the questions: which method is correct and which method should be utilized? The answer to this question is not straightforward, and is conditioned by several factors. First, is the research question better answered by one method versus the other? For example, questions about contagion, suppression, or other issues of timing and cumulative effects within conversational phenomena cannot be effectively analyzed with HLM.

Conversely, questions about the relative effects of individual versus group-level characteristics cannot be adequately answered with event history methods. Therefore, methodological choices should first and foremost be guided by the research question. Additionally, if the question can be answered with any number of methods (e.g. What is the effect of being male on humor use?), then it may be prudent to choose HLM over event history and other traditional regression techniques. HLM will provide a more conservative account, and do so without violating the independence assumption. If one must choose a less than ideal method due to the type of question being asked, then perhaps it is wise to supplement the analyses with HLM as was done in the current study. Performing the analyses with both methods would allow the researcher adequately tap the research question, but forestall him/her from making false conclusions about findings that are not robust across methods. Related to the current study, the HLM analyses prevented me from reading too much into the findings about supervisors and how they use humor since the apparent effects in event history models were reduced to insignificance when comparing them in HLM.

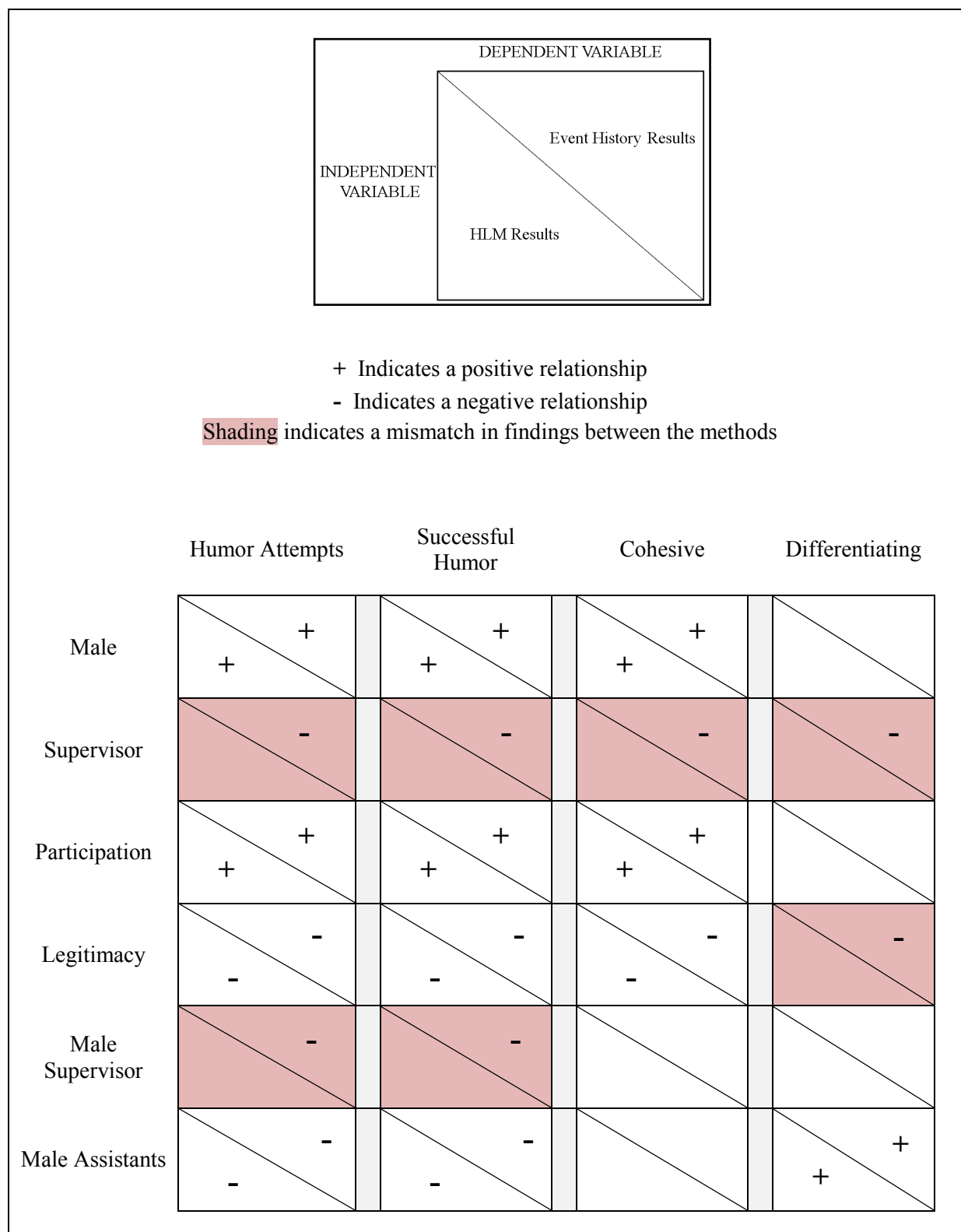


Figure 8.1: Comparing the Results from Event History and HLM Analyses

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