Getting A Laugh: Gender, Status, and Humor in Task Discussions*

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Abstract

Humor is a quintessentially social phenomenon, since every joke requires both a teller and an audience. Here we ask how humor operates in task-oriented group discussions. We use theories about the functions of humor to generate hypotheses about who jokes, when and in what situations. Then we use event history techniques to analyze humor attempts and successes in six-person groups. Our results combine to suggest an image of joking as a status-related activity, with men, high participators, frequent interrupters, and those who are frequently interrupted all showing status-related patterns of humor use. We find substantial time dependence in humor use, in which humor may serve to form a status hierarchy early in a group's development and to dissipate task-related tension later in the discussion. We use these results, in conjunction with core insights on status and emotion from the group processes literature, to develop a new theory of humor use in task-oriented groups. The new theory generates predictions about the content of humor episodes, which we examine with additional data from our group discussions. Consistent with the theory, we find that a higher proportion of men's humor is differentiating, while a higher proportion of women's humor is cohesion-building. We find the same general pattern with our other status variable, participation.

Humor is a social phenomenon, since it requires both a producer and an audience. But why do people joke? And what determines whether or not their attempts at humor are appreciated? Unfortunately, any attempt to analyze humor risks taking

all of the fun out of the subject. Accepting that risk, we follow up on a long-dormant thread in the literature on small group interaction that discusses when and how humor is important in task-group discussions (Bales & Slater 1955). We begin by reviewing the wide-ranging literature that has developed on humor. Then we discuss the implications of this literature for group interaction, deriving predictions about the actual distribution of humor use among group participants and the timing of joke-telling during a task-oriented conversation between strangers. We test these predictions by examining the actual distribution and timing of humorous episodes during conversations in 29 task-oriented groups. We use our findings to develop a new theory about the relationship between status, affect and humor. Finally, we take a deeper look at our data to look for patterns that support or contradict our new theoretical predictions.

Definitions of Humor

To study the production and appreciation of humor in task groups, we need to be able to identify humor events. Unfortunately, humor is a puzzling phenomenon. Like beauty, most people believe that they know it when they see it, yet find it difficult to define (see literature reviews on attempts to define humor in McGhee 1979; Mulkay 1988; Strean 1993; Wilson 1979). In general, theories about what constitutes humor are based inductively on examination of known instances of humor. Most of these theoretical accounts incorporate some notion of incongruity as a necessary component. Humor researchers define verbal humor as text composed of at least two overlapping "scripts" or interpretations (Raskin 1985; Ruch, Attardo & Raskin 1993; Wilson 1979). Unfortunately, as Wilson (1979) points out, this duality of interpretation is a necessary but not sufficient component of humor. Effectively, this finding means that content-based definitions of humor are not sufficient to identify humorous episodes effectively when they are embedded in a larger sample of humorous and non-humorous speech..

Sociologists of humor (e.g., Davis 1979, 1993; Fine 1983,1984) often rely on interactional rather than content-based definitions; they often use either actor's intent or audience response to identify humor. Fine (1983, 1984), for example, defines humorous communication as remarks that have as their intent the creation of amusement (Fine 1984:84). Therefore, he excludes unintended humor and includes failed humor, better allowing for examination of production of humor than of its outcome. Following Fine (1984), we will study humor *in the context of ongoing interaction*, and consider humor to be all remarks that are (apparently) intended to elicit amusement and/or that have that result.

Theories about the Social Functions of Humor

Much of what is written about humor in sociology, psychology, philosophy, communications, and medicine involves descriptions of its functions for either the individual or the social group (Coser 1959, 1960; Fine 1984; Mulkay 1988; Stephenson 1951). So, to understand who uses humor in group discussions and under what conditions, we will start by considering the dominant perspectives on the social functions of humor. Having a theory about the why people engage in humor should allow us to predict who will do so and in what circumstances.

MEANING-MAKING

One proposal about the function of humor is that it is a mechanism for defining reality. Flaherty (1984, 1990) suggests humor serves as "reality play" by teasing or toying with reality in such a way that it generates situation-defining reality maintenance. Similarly, Fine (1984) proposes that individuals engage in jocular interaction in order to define themselves, their interaction partners and the interaction situation. Katz (1996) also notes that humor must be socially constructed by developing the presumption of intersubjectivity (in Katz's case, the shared perspective on the person's reflection in a Parisian fun house mirror).

Wilson (1979:228) argues that the reality defined by most humor is fiercely conservative. According to this view, amusement helps us to affirm our conventional views of the world. Analyzing jokes concerning social and economic differences, Stephenson (1951) concludes that they function as control mechanisms, expressing the common value system and minimizing the notion of class or status conflict and consciousness. Murray Davis (Davis 1979, 1993) argues that, beyond serving to construct or preserve social meanings, humor deconstructs social meaning, thus allowing us better insight into otherwise invisible structures. According to Davis "humor separates the joints of the seemingly seamless social structure, making them visible" (Davis 1993:313).

HIERARCHY BUILDING

A compatible, but more narrow, version of the meaning-making function of humor is the proposal that joking serves to help structure local interaction hierarchies. Several theories of humor propose the idea that joking creates status differentiation among interacting individuals. Most of these perspectives view joking as a socially acceptable form of aggression. Freud (1905) claims that the entertaining veneer of the joke compensated for its hostile content.[1] In a study of humor among colleagues in psychiatric staff meetings, Coser (1959, 1960) found support for the use of ridicule as social punishment.

One of the most frequently cited theories of humorous interaction is superiority theory (LaFave 1972; LaFave et al. 1973). The use of humor here turns on the

content of the humor itself. The essence of the theory is that an individual will use and appreciate humor when the objects of the humor are in categories to which the individual does not belong. This theory is further developed by Zillman and Cantor (1976) to suggest that people enjoy humor that targets members of groups with whom they do not empathize. Humor typically has a target or butt, and jokes tend to be funnier when the good guys win and the bad guys lose (LaFave 1972).

COHESION BUILDING

In contrast to the view of humor as a form of status differentiation and veiled aggression is the argument that humor is a mechanism for developing social cohesion. Francis (1994) argues that humor can be seen as an interpersonal emotion management technique used to strengthen bonds to the group. In support of this idea, after spending seven weeks as a participant observer in a small organization, Vinton (1989) concludes that humor was used to *create* bonds, rather than do violence to them. In the context of her field study, she finds that humor is used as an equalizer and a harmonizer rather than as a dominance mechanism.

Seckman and Couch (1989) separate the concepts of jocularity and sarcasm, arguing that jocularity is used to invite and affirm solidary relationships, while sarcasm can be used for building either solidary *or* authoritarian relationships. According to Seckman and Couch, humor *per se* is a means of defining shared group identities and fostering positive relations. Couch (1992), like Fine (1984), stresses the relational nature of humor. Couch defines an *evocative transaction* is a behavioral exchange between actors that elicits an affective response. He then argues that humor should be studied as an inherently *social* phenomenon, with the unit of observation being not the individual but rather the evocative transaction.

TENSION RELIEF

Humor's stress-reducing benefits are widely recognized (Dienstbier 1995; Lefcourt & Martin 1986; Martin & Lefcourt 1983; Schacter & Wheeler 1962; White & Winzelberg 1992). While empirical findings about the precise relationship between humor and stress remain complicated (e.g., Kuiper & Martin 1998) and controversial (see review in White & Winzelberg 1992), evidence does suggest that when aroused, individuals laugh more (Schacter & Wheeler 1962) and interpret humorous stimuli as more funny (Cantor, Bryant & Zillman 1974; Prerost & Brewer 1977). Laughing appears to reduce psychological stress (White & Winzelberg 1992).

Bales and Slater (1955) relate the tension-reduction functions of laughter to the process of task-group interaction. According to Bales and Slater, interaction within most face-to-face task-oriented groups has two important functions: (1) to accomplish group goals, and (2) to maintain smooth relations. Humor helps task-group members maintain smooth relations by serving as a stress reducer when the

pressures of task accomplishment begin to build. As the intensity of the task-related interaction climbs, so does the interpersonal stress within the group. Thus, periodically a member of the group will momentarily leave the task and make some remark that brings laughter and relief to the other group members; then the group will return to task refreshed and refocused. Sacks (1974) calls these departures from task activity "side sequences," and notes that humor often takes this form in a task discussion. Recent experimental research supports Bales's and Slaters's ideas, finding that exposure to humor increases energy, leads to more positive appraisal of tasks, and generates greater willingness to perform effortful tasks, although does not necessarily increase performance (Dienstbier 1995).

These functional theories of humor have implications for our central questions: who will use humor in task groups, with what success, and when will these humorous episodes occur? In addition, there is an empirical literature that looks at how individual characteristics shape humor production and appreciation. Since, as sociologists, we know that individual characteristics often relate to behavior because of the social positions that they signal, we turn now to this literature for additional insights about our research questions.

Evidence about Participation in Humor

WHO JOKES?

According to the hierarchy-building theories of humor described above, individuals higher (or aspiring to be higher) in the local hierarchy should employ more humor than those of lesser status or power. Unfortunately, there is little research on spontaneous joking that relates status difference to the production of humor. This is one of the gaps that we hope to fill in the literature. In an exhaustive review of the humor research literature, McGhee (1971) noted that less than 10 percent of humor studies dealt with humor creation or production. In our review of the literature since 1971, we see little departure from this general pattern. One exception is the study of gender.

A frequent claim is that men tell more jokes than women (McGhee 1979). In describing feminine speech style, Robin Lakoff suggests that women "have no sense of humor" (1975:56); they neither effectively tell nor "get" jokes. McGhee (1976) reports that children begin exhibiting these gender differences in joke telling around age six. More recent studies give some reason for qualifying these older patterns, however. Some researchers point out that both much of the research on gender differences in humor production and appreciation has been based on a male mode of humor— jokes that are often hostile or sexual in content (see reviews by Crawford 1995; and Lundell 1993). If so, researchers are not the only ones guilty of this bias. In self-report questionnaires, Crawford (1995) found that men

evaluated their own sense of humor more positively than women evaluated theirs. She also found that when asked to write about someone who has an excellent sense of humor both men and women chose more often to write about a male (although men chose men by 5:1 and women chose men by only 2:1).

WHO LAUGHS?

For someone to be funny, another must be amused (Sacks 1974; Fine 1984). Just as attention is a necessary requisite of power (Derber 1979), supportive or unsupportive responses also make or break attempts at humor. In this sense, the act of laughing (or not), then, is a potentially powerful one. For example, Derks, Kallard and Etgen (1995) report that a joker that does not "get a laugh" is subsequently rated more negatively and is considered to be more aggressive.

Superiority theory (La Fave 1972) predicts that we are more likely to appreciate humor when it enhances, rather than denigrates, our own position relative to others. However, if laughing is a social response, we might expect laughter from those who *support* (wish to enhance the position of) the joke teller. Consequently, we will attempt to describe separately research concerning who *appreciates humor* and who *laughs* (see more extensive reviews of literature on humor appreciation in LaFave 1972; Lakoff 1975; Zilmann & Cantor 1976).

Findings about humor appreciation are far from consistent. Again, gender has been a favorite topic. Some research suggests that women generally undervalue humor, as compared to men (Chupchick & Leventhal 1974; McGhee 1971, 1979), while more recent studies suggest that women are generally more appreciative (Lundell 1993). Recent research also suggests that men and women may appreciate *different kinds* of humor (Crawford 1995; Lundell 1993; Mundorf et al. 1988). Mundorf et al. (1988) assess men's and women's reactions to hostile, nonsensical, and sexual humor; they find that men have a higher appreciation for humor overall, and interaction effects show that men particularly enjoy sexual humor more than women. Women only enjoy hostile humor when men are the victims.[2] Yet other studies find no gender differences, however. In a study of humor use as a coping mechanism, Lefcourt and Martin (1986) find no gender differences in reported liking for humor or in the stress reducing effects of humor.

Other than gender there has been little attention to who enjoys humor. Stress researchers suggest a relationship between amusement and reduced stress (Lefcourt & Martin 1986; Martin & Lefcourt 1983), increased sociability and healthier self-concepts (Kuiper & Martin 1993). However, this research confounds production and appreciation of humor into a generalized of "sense of humor."

Notably, none of the previously described research on humor appreciation focuses on *conversational* humor. However, several studies point out systematic differences in the patterns of *laughter* during conversational interactions. In a comparison of humorous interaction between dyads and groups of larger than two, Glen (1989) notes that when a member of a dyad jokes, he or she is the first to

laugh. The typical pattern is for the partner to then join in the laughter, sharing the humor and showing support for the speaker. However, in groups larger than two, the typical pattern is for a group member other than the speaker to be the first to laugh, and then for the speaker and remaining group members to join in the mirth. In fact, Glen finds that when a speaker in a group of larger than two laughs at his or her own joke first, it actually decreases the probability that the joke will be perceived as funny by the group.

Women laugh more than men in group conversations (Dovidio et al. 1988, Dovidio & Ellyson 1982) as well as display lower levels of nonverbal dominance. Laughter and smiling appear to be highly supportive conversational behaviors in a small group setting. Interestingly, the issue of *what* is being supported is seldom examined in these studies of group conversation. That, of course, would require attention to timing and sequences of actions. We now turn to the limited literature on these topics.

The Timing of Humor

Timing is everything. The notion that effective delivery of a joke often hinges on timing is so accepted that humor researchers state it as truth, rather than examining it empirically. Timing issues related to sequencing have received a little more empirical attention. Conversational analysts identify a tendency to "joke-first", or give a humorous response before responding seriously to another's utterance (Sacks 1974; Norrick 1993). Others note the importance of seriality and joke order in the appreciation of humor (e.g., Forabosco 1994). Because so little humor research examines its spontaneous occurrence (Norrick 1993), there is little systematic evidence about its placement within conversation or its contagious effects. In this study, we consider the importance of the timing of jocular interactions through the course of ongoing conversations and with respect to other jocular interactions. Our analyses of timing are exploratory in large measure, since so little theoretical work has been done. With regard to other variables available in our data set, we can specify patterns that would be implied by, or consistent with, the theoretical orientations toward the functions of humor.

A Summary of Predictions from Previous Literature

Gender

If humor use is status or power related (as in the hierarchy-building perspective), we would expect that men would joke more than women in mixed sex conversations, and would be more likely to have their jokes appreciated by the other

members of the group.[1] The other perspectives on the functions of humor provide us with no obvious expectations about the relationship between gender and joking.

GENDER COMPOSITION

Both the hierarchy building and the meaning-making perspectives would lead us to predict that humor use should be more prevalent in single-gender groups. It is these groups that require the most work in terms of defining the situation, since there is less the status differentiation among group members. Conversely, both the cohesion-building and the tension-relief accounts of humor use would suggest that rates of joking would be higher in mixed-gender groups. These groups begin with more of a hierarchical structure in place and might be expected to have a greater need for both solidarity-building and tension-relieving activities.

PARTICIPATION HISTORY

Higher status group members contribute more frequently to group discussions (see a recent review in Skvoretz & Fararo 1996). If humor is a way of establishing and enacting hierarchical relations, then we would expect that high participators will joke at a higher rate, and that they will also be more successful at eliciting laughter from others. The other perspectives suggest no clear predictions for the effects of participation on rates humor use.

INTERRUPTION HISTORY

Researchers often interpret interruptions as a sign of status or power (Kollock et al. 1985, Smith-Lovin & Brody 1989; Johnson 1994). Correspondingly, if humor use is hierarchical in nature, we would expect those who get interrupted frequently to make fewer jokes than those who are not interrupted. We also would expect that those who interrupt others more frequently might be more likely to joke as well. Again, the cohesion-building, meaning-making, and tension-relief perspectives make no clear predictions relating individual status cues and the use of humor.

TIMING IN CONVERSATION

Theories that rely on the notion of humor as a meaning-defining mechanism, a hierarchy-building strategy, or a means of increasing group solidarity, would all predict that humor use would be highest at the beginning stages of a task discussion among strangers. It is at this stage of the conversation that there is more relationship defining work to be done. In contrast, the conception of humor as a pressure valve to reduce built-up tensions, suggests that the highest rates of humor should be during the latter part of the conversation when task activity is heated up and time constraints are more salient.

CONTAGION

The notion that humor is contagious is a pervasive and intuitively appealing one. It is consistent with any of the theoretical perspectives discussed here, but is not directly predicted by any of them. Because our intuitions lead us to expect that humor use will be contagious, we will use methods that allow us to model and control for this possibility.

Data

We analyze incidence of humor during conversations in 29 six-person discussion groups. The data were originally collected in the early 1980s at the University of South Carolina (see a full description of the data collection and transcripts in Smith-Lovin 1990b). The participants are Anglo undergraduates between the ages of 17 and 25 enrolled in introductory sociology.[2] There are approximately four groups in each of seven gender-composition conditions (all female, one to six men). Group members are seated randomly around a round table while a gender-neutral, collectively-oriented task stimulates group discussion. The task is to generate a new problem for another task group to solve. The new problem must meet a number of criteria, which were originally developed by Fisek (1974). We use transcripts created from two videotapes that were made of each group discussion, which include notations of group and individual laughter. Many other researchers analyze these task-oriented group discussions (see review in Skvoretz & Fararo 1996), focusing primarily on the status-organizing processes that shape participation and interruption. We differ from earlier analyses by focusing on the speech turn as the unit of analysis, by using dynamic models to examine the relational character of the conversational events, and, of course, by our focus on the role of humor in the conversations.

MEASUREMENT

Following Couch's (1992) admonition, our unit of analysis is the "evocative transaction" — in this case, the offering of a joke and its reception by others. Our observations consist of speaker turns, with our focus on humorous speaker turns. Each observation includes information about the group setting, the speaker, the conversational history of the speaker and of the group, the humorous nature of the turn (humorous versus non-humorous), the response to the humor, etc. In this way, our unit of analysis is truly an interaction, rather than an individual.

We code three types of humorous events: (1) speaker turns that produced group laughter immediately afterward; (2) speaker turns followed by laughter of the speaker, but not the group; and (3) speaker turns that contained other obvious instances of exaggerated, incongruous, or sarcastic statements intended by the

speaker to be humorous. In the final data, turns like type (3) above are only considered humorous when four undergraduate coders unanimously agree that the turn was intended to be humorous.[3] Humor attempts include all three categories of events: remarks that lead to group laughter, remarks that are followed by speaker laughter, and remarks that all four coders agreed were humor attempts but which did not lead to laughter. We consider only remarks that produced laughter by group members other than the speaker to be successful humor.[4] Humor attempts that evoke either no laughter or laughter only by the speaker are coded as failed humor attempts. All utterances that were not humor attempts and did not lead to laughter are coded as non-humor.

To measure the length of spells, we first count the number of words spoken between each speaker transition. When trying to understand the dynamics of these task-oriented discussions, the amount of speech that occurs during any given period (word-time) is a more substantively appealing measure of time than the number of seconds that elapse during that period (clock-time). Use of clock-time to measure interactional dynamics results in inflated participation measures for those who speak slowly. Previous research suggests that high status members actually talk faster (Rashotte & Smith-Lovin 1997). We believe that speakers accumulate local histories through the quantity and character of participation, rather than through literal floor time. For these reasons, we believe that the dynamics of contagion and group phases can best be revealed by looking at the number of words spoken in a turn.

We construct two dependent variables: (1) conversation duration — the number of words between the beginning of the conversation and each humorous event and (2) spell duration — the number of words between each humorous event. In addition, we constructed a state variable that could take on one of three values (1) failed humor attempts, (2) successful humor attempts, and (3) nonhumorous remarks. The conversation duration variable allows us to examine the timing of humor use across the course of the conversation. The spell duration variable allows us to examine the relationships among humor events within the conversation (e.g., whether one humor attempt leads to others). The state space variable allows us to examine the effects of covariates on the rate of humor use in the conversations.

Methods and Results

We use continuous-time event history methods to analyze the data. These methods model the effects of covariates on the rate of transitions between states (Tuma & Hannan 1984). In all, there are 5640 speaker turns, consisting of 5265 nonhumorous turns and 375 humor attempts in the 29 conversations. Almost half of the humor attempts are successes, by our criterion of group laughter. The average number of humorous turns per conversation is about 13 and the average per speaker is about two.

We denote the state-space as a variable $Y(t)$ which can take on three values indicating the state being occupied by a conversing group at a given time t. To model the rate of transition between these states, we estimate the hazard of humor attempts and successes, which can be described as the probability of a transition from state j to state k during an interval $t + dt$, given the occupation of state j during time t. This rate has the following form:

$$h(t) = \lim_{\Delta t \to 0} \Pr\left[Y(t + \Delta t) = k \mid Y(t) = f\right]$$

where $h(t)$ is the hazard of an event at time t, $Y(t)$ indexes the state of the conversation at time t, and k and j are values of $Y(t)$.

We investigate the possibility of time dependence across the course of the conversation with a variety of plotting techniques (Hannan 1989) and model fitting strategies (Allison 1995). We begin by using non-parametric Kaplan-Meier hazard rate estimates to look descriptively at the use of humor over the course of the conversation and at humor contagion. The two forms of our dependent variable — duration of nonhumorous group conversation and duration of a non-humorous spell of talk by a speaker — allow us to examine the two separate types of dynamic processes in these interactions. By looking at the rate of humor across the duration of the conversation, we can examine the humor trends over time. By looking at the time dependence of the spell duration we can look the inhibiting or contagious effects of a joke on subsequent humor.
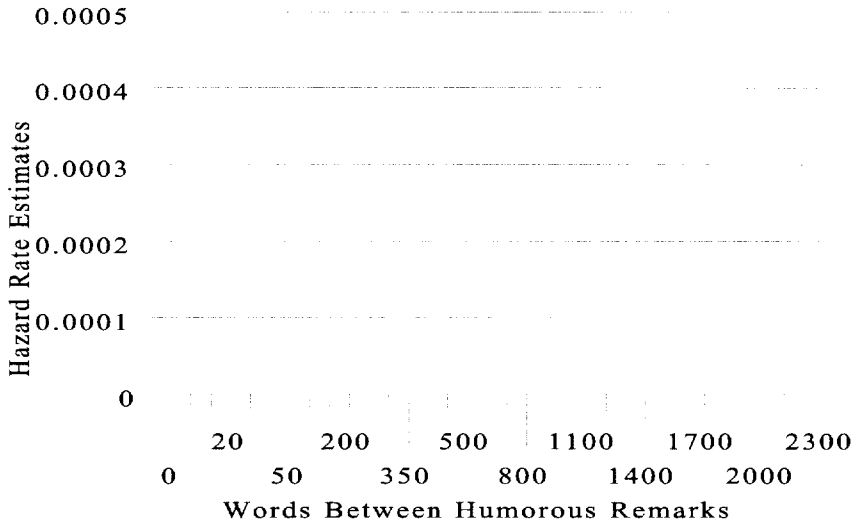
Humor across the Conversation

The average group discussion is approximately 2000 words long. Figure 1 displays the estimated hazard rates for humor across the course of the conversation. These hazard estimates control for the actual number of speaker-turns during each of these periods and generate an assessment of the risk of a given remark being humorous at different points in the discussion. As seen in Figure 1, the risk of joking seems to increase steadily across the conversation, after a brief flurry of jokes at the beginning. Plots of the estimated log-hazards against the logarithm of conversation duration reveal an approximate linear pattern, suggesting a Weibull-distributed time dependence.[1] Consequently, we used Weibull models for the regressions reported in this article.[2]

The Weibull model specifies that the rate of transitions is a power function of the waiting time (Tuma & Hannan 1984:211). A generalized Weibull model allows for the regression of a vector of measured covariates, â on the log of the waiting time:

$$\log T = -B^{\Delta}x + \sigma W$$

where ó is a scale factor, and W is the extreme-value distribution (Kalbfleisch & Prentice 1980: 31-2). The scale factor ó is inversely related to time dependence ñ (Hannan 1989). ñ tells us about the character of the time dependence in the data.
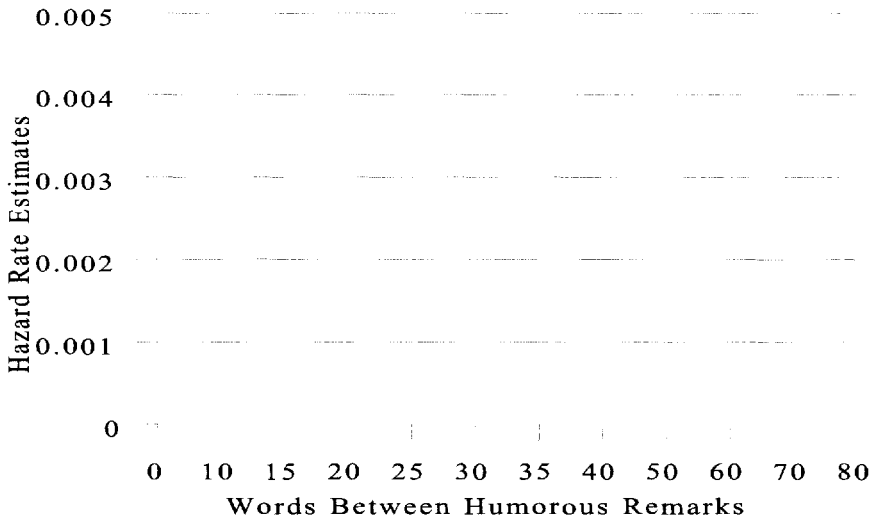
FIGURE 1: Risk of Humor Across the Conversation

If ñ < 1 then the rate is a monotonic decreasing function of the waiting time; if ñ = 1 then the rate is independent of waiting time, and if ñ > 1 then the rate is a monotonic increasing function of the waiting time.

Contagion

We also examine the possibility of spell duration dependence, or humorous contagion, with the same plotting and regression techniques. In these analyses, we model time dependence within spells, rather than over the duration of the conversation. Like the models of duration of conversation, the Weibull model seems to be the best fit for the dynamics of humor rates in these conversations. In contrast to the timing over the entire course of the conversation, the rate of humorous remarks appears to be a *decreasing* function of spell duration (scale factor 3.33, duration dependence estimate 1/3.33 = 0.30). In other words, there is a strong contagion effect of humorous remarks; a humorous remark *increases* the probability of another humorous remark in the near future. Figure 2 illustrates the form of this contagion effect by plotting the Kaplan-Mayer hazard rate estimates over the course of a spell. The risk of a joke is clearly highest within a few words of the beginning of another joke, with the risk peaking at about eight words past the beginning of the previous prior joke and falling off rapidly after 20-25 words. Given that the average turn length is about 10 words, we conclude that the highest risk of humor is in the next turn after a humorous utterance.

FIGURE 2: Contagion of Humorous Remarks

Effects on Rates of Humor

In addition to assessing the time dependence on the rate of transitions between states, event history methods allow estimation of the effects of covariates on the timing of the events. Because our spell duration clearly indicates that there is time dependence in these results, we use a Weibull model to estimate the effects of our covariates on the rates of humor use. In these models, the spells of interest are conversational turns of any type and (1) nonhumorous remarks, (2) humorous remarks, and (3) successfully humorous remarks are each regarded as censored in any model where they were not the focal events (Hannan 1989). This creates a competing-risks model where successful humor, failed humor, and nonhumorous turns are modeled as independent, competing states (Kalbfleisch & Prentice 1980:168-72; Tuma & Hannan 1984:68). In this way, we can assess how the independent variables influence the risks of humor occurrence. We estimate regression models with the LIFEREG procedure in SAS. This program estimates the effects of the coefficients on the waiting time between humorous remarks.

Table 1 reports the covariates' influence on the waiting times between humor attempts and the waiting times between successful humor episodes. In addition to the covariates of interest, we include period variables to control for the influence of timing over the course of conversation we describe in Figure 1.

TABLE 1: The Effects of Timing and Group and Speaker Characteristics on the
Rate of Humor in Small Task Group Conversations

Independent Variables	All Humor	Successful Humor
Intercept	15.49**	19.39**
	(.65)	(1.32)
All male	.73	.31
	(.54)	(.88)
All female	-1.90**	-3.76**
	(.59)	(.95)
Participation	-.01	-.06*
	(.01)	(.03)
History of being interrupted	.13*	.02
	(.06)	(.10)
Speaker gender	-1.41**	-2.94**
	(.43)	(.79)
History of interrupting	-.04	-.35**
	(.07)	(.11)
Period 1	-1.14*	-1.03
	(.57)	(.86)
Period 3	-.94*	.55
	(.45)	(.76)
Scale	3.33	3.39
	(.16)	(.26)
Loglikelihood for the Weibull	-2124.56	-978.34

Gender

Speaker gender is a dummy variable coded 1 for male and 0 for female. As seen in
Table 1, the coefficient for the effect of speaker on waiting time between humor is
significant and negative ($b = -1.41$, $p < .01$). We can reverse the sign to consider
the effects of the covariates on the *rate* of humor.[1] Thus, consistent with the
hierarchy-building explanations of humor use, we find that men engage in humor
at higher rates than women. We also find that men engage in successful humor at
higher rates[2] than women ($b = -2.94$, $p < .01$).

Gender Composition

Two gender composition dummies assess the separate impact of being in an all
male group or an all female group, as compared to a mixed gender group. As seen
in Table 1, groups consisting entirely of women have a significantly higher rate of

humor ($b = -1.90, p < .01$). Compared to mixed gender groups, all male groups did *not* joke more frequently ($b = .73$, n.s.) — at least not when controlling for the influence of speaker gender). Likewise, the rates of successful humor are higher among all female groups ($b = -3.76$, p < .05), but not all male groups ($b = .31$, n.s.).

Recall that the hierarchy building and meaning-making perspectives lead us to expect a higher rate of humor in homogeneous (single gender) groups. The tension-relief and cohesion-building perspectives predict the opposite. Since a distinctly different pattern occurs in all female and all male groups, we are left with no firm conclusions. One could use gender culture arguments (e.g., Maltz & Borker 1982; Tannen 1990) to suggest that all male groups have a more hierarchical, competitive atmosphere, and therefore it is only the all female groups who need hierarchy-building. This explanation is clearly post-hoc, however, and does not seem supported by the merry, relaxed nature of the talk in the women's groups. It seems just as likely that the differences between all male and all female groups are based on some other gendered behavior pattern, and not related directly to the hierarchical or cohesive processes in the groups.

PARTICIPATION

A participation variable assesses the frequency of each group member's participation in the earlier parts of the group discussion. This variable is a counter, cumulating the number of contributions speakers make throughout the conversation. As seen in Table 1, higher participators are not any more likely to joke than those who participated less ($b = -0.01$, n.s.). However, they are more likely to engage in successful humor than low participators ($b = -.06, p < .05$). Since high participators are high status in these groups (Smith-Lovin et al. 1986; Skvoretz & Fararo 1996), this result supports the ideas about humor as hierarchy-building.

INTERRUPTION HISTORY

Two variables assess the impact of a speaker's interruption history on his or her humorous activity. *History of Interrupting* is a counter variable that keeps a cumulative record of the number of times a speaker has interrupted other speakers. Similarly, *History of Being Interrupted* keeps count of how many times a speaker has been interrupted by someone else in the past.

The coefficient estimates in Table 1 indicate that having been a frequent target of interruptions in the past slows the rate at which group members use humor overall ($b = 0.13, p < .05$), but it has no effect on their success rates ($b = 0.02$, n.s.). In contrast, having a pattern of interrupting others in the past increases the likelihood that one engages in successful humor ($b = -.35, p < .01$). Note that these effects of interruption history hold when controlling for the frequency of overall participation in the group discussion. So, controlling for participation histories,

frequent interrupters engage in more successful humor. And, those who had been frequent targets of interruptions are less likely to engage in humor. Again, since we regard the interruption patterns as indicative of status structures in the groups (Smith-Lovin & Brody 1989), this pattern supports the hierarchy-building conception of humor use.

TIME PERIOD EFFECTS

Two dummy variables capture the effects of the timing in the conversation on the rates of humor. Period 1 refers to the first 400 words of the conversation. Period 2 (the omitted category) refers to the middle portion of the conversation (400-1400 words). And, Period 3 refers to the latter portion of the conversation (greater than 1400 words). As seen in Table 1, compared to the middle portion of the discussions, there is a significantly higher rate of humorous remarks at the beginning ($b = -1.14$, $p < .05$) and end ($b = -.94$, $p < .05$) of the conversations, when controlling for the other variables.[1] This effect did not extend to successful humor.

The small flurry of humor attempts at the beginning of the group conversation is consistent with the hierarchy-building and meaning-making ideas from the humor literature. The fact that less of this humor is successful may indicate the lack of a common culture at this point in the groups' development. On the other hand, these initial attempts at humor may indicate the tension of beginning a new, relatively undefined task with a group of strangers. The tension relief perspective also would be consistent with the rise of humor over the course of the conversation (after the first brief flurry of jokes).

CONTAGION

As described above, the scale factors translate into duration dependence coefficients less than one, indicating a decreasing effect of spell time on the probability of humor. In the successful humor model, we find a scale factor of 3.39, which translates into a time dependence coefficient of $1/3.39 = .29$, suggesting a decreasing effect of spell time on the rate of successful humor. In other words, the occurrence of humor immediately increases the likelihood of future successful humor, with the accelerated risk dropping off as time passes since the last joke. Both overall and successful instances of humor are highly contagious.

Summary of Findings

Our results do not overwhelmingly support any single understanding of the function of humor. However, the generalities that do appear in these data are intriguing. For example, if the timing effects demonstrated by the estimated period coefficients in Table 1 can be strongly interpreted, this pattern in the rates of humor

use over time may support both the meaning construction and the tension-release explanations of the role of humor in these types of conversations. The humor dynamics in these groups suggest that there is a short spurt of humor early in the conversation, and then a lull, followed by a renewal of humorous interaction during the latter part of these task group discussions.

Men tell more jokes and tell more successful jokes. However, women joke much more when no men are present, even more so than men in all male groups. Evidently, women only joke when men are not around.[2] Being the object of repeated interruptions makes speakers less likely to volunteer a humorous remark. And, being a frequent participator and interrupter made one more likely to engage in successful humor. Putting all of these patterns together, there is fairly consistent support for the proposition that joking is a behavior in which high status people engage (at least in status differentiated group contexts).

Overall, our results seem somewhat more supportive of the use of humor as a *hierarchy-building* mechanism than as a *cohesion-building* mechanism, at least in these task-oriented group discussions among strangers. We began this article by noting a lack of formal theoretical work on conversational humor, especially about its role in the dynamics of task group interaction. Based on our reading of the related literature, the event history regressions presented here, and our own examination of the humorous episodes in the transcripts, we think it is likely that jocular interaction serves multiple purposes in these task groups. Most notably, humorous speech does seem to be related to status in ways that resemble other, better understood, status-related task behaviors. In addition, it seems to communicate interpersonal affect in ways that seem related to recent developments in the area of emotions and group process. Consequently, we now turn our attention to these theoretical ideas to develop a more formal treatment of how humor may be invoked in status-organizing processes in task group discussions.

A Provisional Theory of Humor and Group Processes

Drawing from the patterns we observed in the above analysis of conversational humor, along with key ideas from theories of group processes more generally, we now develop a set of more formal propositions about the role of humor in task group interactions. We offer these propositions as a provisional theory of humor and status in goal-oriented conversations. We restrict the scope[3] of this provisional theory to the following settings: (1) Group members are relative strangers; (2) Group members are interacting face-to-face; (3) Group members have a collective goal; (4) The setting has a relatively unstructured, conversational focus; (5) The duration of the interaction is expected to be limited and brief.

If we consider the relationship between humor and emotion, we can begin to make the link between humor and existing theories about social interaction in groups. Recent research in sociological social psychology elaborates the relationship

between actors' social positions in groups and their typical emotional experiences (see review in Smith-Lovin 1995). According to several different theoretical traditions, high status group members experience more positive, empowering emotion than those with lower status. This proposition exists as a derivation from affect control theory (e.g., Heise 1989; Smith-Lovin 1990a), Kemper's social relational theory of emotions (Kemper 1978), and recent extensions of status characteristics theory (Lovaglia & Houser 1997). The basic idea is that people who are high on the status (evaluation) and power (potency) dimensions will, under normal circumstances, produce actions that maintain these positions and reflect the positive interactional environment that accrues to them as a result of their positions. Therefore, group leaders or those who have high standing within the group because of some status characteristic imported from the larger social structure should be more likely to engage in the usually positive and always powerful acts of humor production.[4]

In addition to reflecting social positions, affective processes may in turn influence an actor's position in a group. In a study of interpersonal sentiment and face-to-face interaction, Shelley (1993) found that group members who were liked are given more opportunities to speak and their input is more positively evaluated by other group members. Affect control theory also suggests this dynamic, since people who engage in positive, powerful, lively behaviors are likely to be seen as occupying identities with that character (Robinson & Smith-Lovin 1999). In an ambiguous situation like a task group interaction among strangers, task cues and other behaviors are used to establish the relevant identities of participants and a status structure for accomplishing the task (Rashotte & Smith-Lovin 1997).

If we assume that (1) humor production more often expresses positive, powerful feelings than negative, powerless feelings (at least within the context of collectively oriented task groups); and (2) individuals who amuse others with their humor are subsequently evaluated as more positive and powerful; then we can derive the following propositions from the theories reviewed above.

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

Proposition 2: High status group members will use more successful humor (elicit more expressed appreciation) than low status group members.

Proposition 3: A group member will receive more opportunities to speak after a successful joke.

Proposition 4: A group member will receive more positive evaluations of task input after a successful joke.

Propositions 1 and 2 are, of course, the patterns that we found in our event history analyses. Propositions 3 and 4 will require data on the content of all turns (humorous *and* nonhumorous) in a dynamic study of task group processes. Those analyses will have to await further studies.

The notion that humor could serve to build group cohesion and solidarity is consistent with several recent theoretical developments concerning the relationship between positive emotion and group cohesion. Lawler and his colleagues (1992; Lawler & Yoon 1993, 1996) argue that positive emotion leads to increased commitment to the group. Drawing from Kemper's work on integrating and differentiating emotions, Lovaglia and Houser (1997) argue that positive emotion (especially when experienced by high status individuals)[5] decreases resistance to influence and works to equalize status relations. Similarly, other social psychological research reveals that people in a good mood are more compliant and engage in more benevolent behaviors (see review in Isen 1987). Thus, if we assume that humor serves to, among other things, increase positive emotion, we might expect joking to be used as a strategy for increasing members' affective ties to the group.

Proposition 5: Humorous interactions in goal-oriented groups will strengthen members' affective ties to the group.

Exploring this proposition will require data on affective commitment to groups and/or strength of group identities after the task-oriented conversation has occurred. Ideally, we would want to manipulate the humor production, so that alternative hypotheses about the character of the group members (e.g., their good nature) could be eliminated.[6]

Propositions 1 through 5 beg the question of *who* will be the most likely to engage in strategies that *strengthen* group bonds. High status people and those who would seek influence in a group would be the most interested in decreasing resistance to influence. On the other hand, those who would be disadvantaged by an exacerbation of status differences might be interested in the status equalizing effects of positive affect. In order to better disentangle these more complex patterns we need to consider the *content* of the humor. In our event history analyses here, we elected to forego coding the content of these humorous interchanges to study, content-free, the dynamic patterning of humorous interaction in the 29 groups.[7] However, the loose arguments we drew from the humor literature, the logic of some of the better developed theories of humor (e.g., superiority theory), as well as the implications we draw from the sociological social psychology literature all hinge in part on the content of the jokes themselves.

We propose that types of humor can be categorized in terms of their *function for the group*. Specifically, we argue that it varies in its cohesiveness. We consider humor to be *cohesion building* in nature when it treats the group as a collective unit. This can happen when the joke refers to the group itself, or when the joke pokes fun at outside individuals or categories to which none of the group members belong. For example, jokes can appeal to feelings of group-ness directly by referring to the group as a unit (e.g., students joking about student poverty, humorous referents to the group's creativity — or lack thereof). However, jokes can also serve to strengthen feelings of group-ness by satirizing outside groups or individuals (e.g., ethnic and religious jokes directed at categories not present in the group, or

students joking about professors). In contrast, *differentiating* humor calls attention to the separate group members as when a speaker jokes about him- or herself, or when a speaker teases another group member, or subset of other group members. These types of jokes may be more likely to be used in hierarchy building. At any rate, they break down the sense that "we're all in this together" and point out distinctions among group members.

Considering these types of humor separately also allows us to make sense of our argument that low status members might benefit more from the status-equalizing effects of cohesive humor. Because cohesive humor appeals to feelings of group-ness we might expect it to operate like the other expressions of group identification in similar settings. Ridgeway (1982) found that women could effectively act as leaders only when they expressed appropriate levels of group-oriented motivation. So, based on our argument that low status members will benefit from the status-equalizing effects of cohesive humor, along with Ridgeway's argument that lower status members can more effectively influence others when they appeal to group-identification, we predict the following:

Proposition 6: Cohesion-building humor will be a larger proportion of low status members' humor attempts than of higher status members' humor attempts.
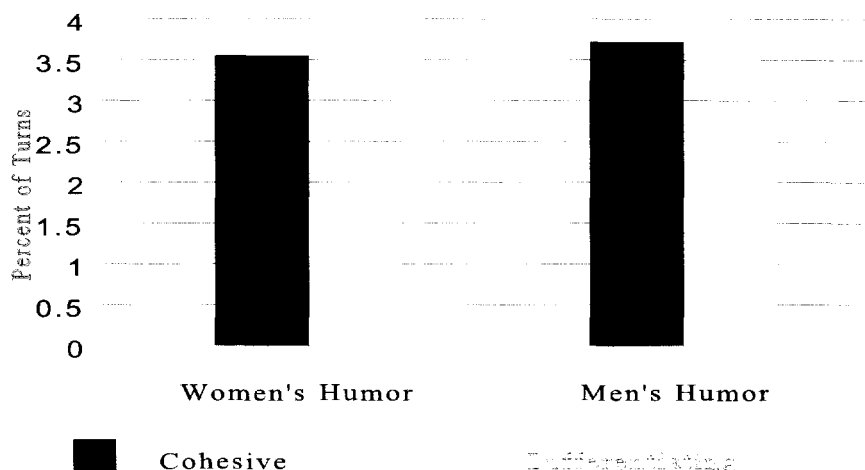
In a necessary corollary to Proposition 6, we expect that the hierarchy building nature of differentiating humor will be used less often by those likely to be disadvantaged by the hierarchy.

Proposition 7: Differentiating humor will be a larger proportion of high status members' humor attempts than of low status members' humor attempts.[8]

We can provide a preliminary examination of these propositions by looking back at the transcripts analyzed above. We code each humor episode as either (1) cohesive, (2) differentiating, or (3) other/unidentifiable.[9] We operationalize status in two ways: gender and participation.

We predict that low status people (women and low participators) will use proportionally more cohesion-building humor (proposition 6) while high status people (men and high participators) will use proportionally more differentiating humor (proposition 7).[10] Men show higher absolute levels of both cohesive *and* differentiating humor than women ($\chi^2 = 4.07, p < .05$)[11] (see Figure 3). Of course, this pattern is not surprising since we know from our event history analyses that men have a higher rate of humor overall than women. While cohesive humor is the most common type of joking for both men and women, we can see from the relative height of the bars that differentiating humor makes up a larger proportion of men's than women's humor productions. Figure 4, which displays proportions of all humor attempts that are cohesive or differentiating, makes this pattern much clearer. Over 35% of men's humor productions are differentiating, compared with 26% of women's ($\chi^2 = 3.72, p < .05$), providing support for proposition 7. A slightly higher proportion of women's humor is cohesive in nature (56%, as opposed to 50% for men) in the direction predicted by proposition 6, but this difference is

FIGURE 3:   Cohesion and Differentiation in Women's and Men's Humor

not significant. Although not predicted by our theory, this gender pattern is even stronger in same-gender groups. Women in all female groups spend much more time engaged in cohesive humor and less time engaged in differentiating humor than men in male groups (see Figure 5).

Since participation levels are another indicator of status (in some ways, a more direct one), we can examine the same propositions with this alternative measure. Figure 6 shows the use of cohesive and differentiating humor by high- and low-participators. Low participators use cohesion-building in 59.6% of their humor attempts, while high participators build cohesion in 51.39% of theirs, but this is a nonsignificant difference (Chi-square = 1.21, n.s.). High participators are more likely to use differentiating humor than are low participators: 33.13 as opposed to 21.15%, consistent with our status arguments (Chi-square = 2.98, $p < .05$).

THE TARGET OF HUMOR

One of the tough aspects of being in a task group is trying to deliver criticism without arousing anger and demoralizing the team. Research in status characteristics theory suggests that high status members disagree with others more often and provide more critical feedback than lower status members (Berger et al. 1977; Ridgeway & Johnson 1990). On the other hand, the high status members presumably want to avoid damaging their own reputations and the good will of the group in the process. "Criticizing" is a negative behavior, and will lead to negative impressions of the one who enacts it (Smith-Lovin 1990a). A positive identity as a

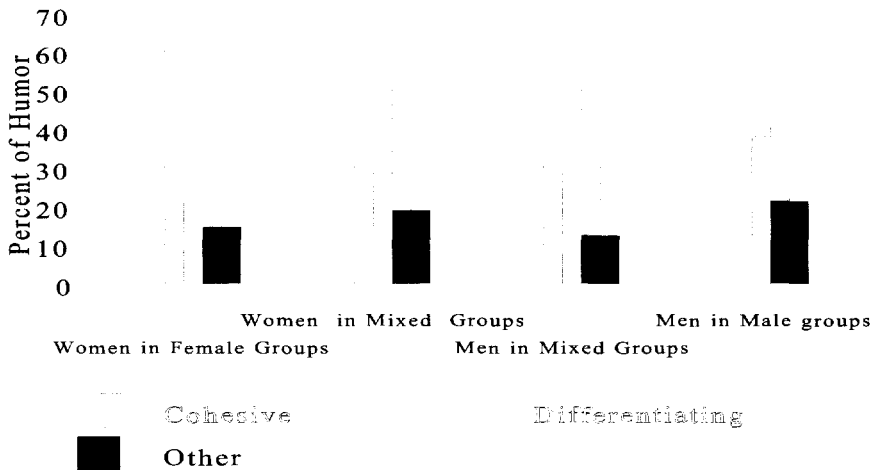FIGURE 4:   Cohesion and Differentiation in Women's and Men's Humor

leader can be more easily maintained if the directive is transformed into a joking, lighthearted behavior. Some humor researchers argue that humor protects us from typical sanctions we might expect from the same behaviors delivered in non-humorous form (e.g., Ford 1997). In support of this, we observe in our group transcripts that humor is often used as a way of "softening" directives and critical remarks.

Explaining this kind of humor requires us to make a distinction between differentiating humor that is directed at self versus differentiating humor that is directed at other group members. We conceptualize *direction* as a two-category distinction between jokes that are directed *inward* (including oneself as an individual as well as a group with which one identifies), or *other* (including other individuals and other groups). Combined with the cohesive/differentiating distinction this yields four distinct types of jokes: (1) cohesive, inward-directed — jokes directed at the present group, (2) cohesive, outward-directed — jokes directed at groups or individuals outside the present group, (3) differentiating, inward-directed — jokes directed at the humorist him- or herself, and (4) differentiating, outward-directed — jokes directed at another member (or subset of members) of the group. Table 2 displays this typology and the labels that we will use to refer to the four categories of humor that it produces.

Under this scheme, jocular criticism of group members, or disagreements delivered with a laugh will be considered differentiating, other-directed. Thus we can state our claims about the relationship between status and this kind of humor:

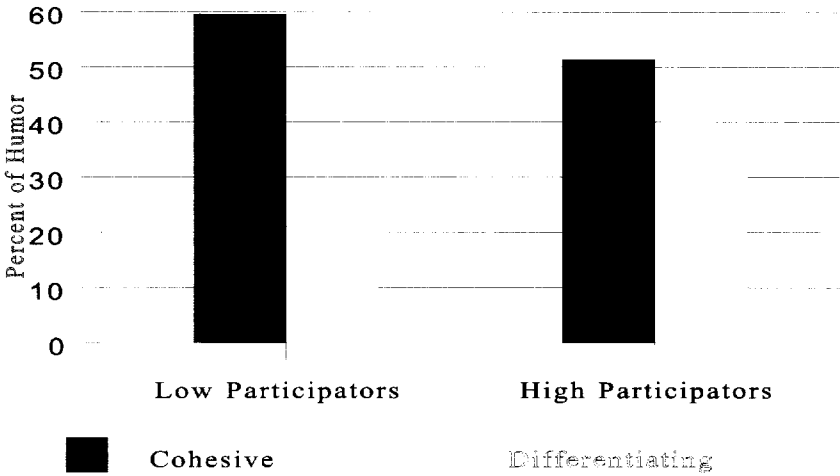FIGURE 5:   Gender and Cohesive Humor In Mixed and Same Gender Groups

Proposition 8: High status members will use more outward-directed differentiating (member-directed) humor than will lower status members.

On the other hand, Ridgeway and Johnson (1990) argue that only high status members can express negative feelings; lower status members must suppress negative feelings even if they experience them. One way of suppressing expression of the negative might be through joking. Based on past research of task group interactions, especially status characteristics theory (Berger et al.1977), we expect that low status members will more rarely offer disagreements and negative evaluations. However, when they do, it might well be accompanied by laughter or attempts at amusement. This leads us to qualify our propositions even further:

Proposition 9: Disagreements and negative evaluations of other group members will be more likely to be expressed with differentiating, outward-directed humor (member-directed) *when* delivered by low status members than when delivered by high status members.

Proposition 9 requires data that we do not have: coding of *all* the speech turns in terms of their task content. However, we can make a preliminary assessment of Proposition 8. Here, we again look at gender differences and differences between high and low participators. Figure 7 shows a comparison between men and women on the four types of humor content described in Table 2, again expressed as a percentage of all of their humor attempts. The type of humor that differentiates the group by commenting on other groups members is "member-directed" humor. As with all other types of humor, men used higher rates of member-directed humor

FIGURE 6:   Cohesive and Differentiating Humor Among High and Low
Participators

than did women. However, the member-directed humor did not make up a significantly higher *proportion* of men's humor in mixed sex groups. Indeed, it was the least frequent category of humor for men, while women use *self*-directed humor the least. As anonymous reviewer to this paper pointed out, the meaning of self-directed humor may well differ by the status of the speaker. High status members may be able to afford to make jokes at their own expense, and even seem a little more secure in the bargain (e.g., a famous statistician joking about being "bad with numbers"). While lower status members may only serve to denigrate themselves with self-directed jokes. This suggests that future dynamic work might consider the possibility of an interaction between status and self-directed humor on status gain and loss in a conversation.

When we examine Proposition 8 using level of participation as our status variable, we again find little support for it. In Figure 8, there is a very slight tendency for high participators to use more member-directed humor, but it is not significant (15.79 versus 9.62 percent, Chi-square=1.34, n.s.). Furthermore, we don't see any notable tendency for high participators to use more inward-directed humor than low participators. In fact, the low participators are quite likely to use group-directed humor when they joke. Therefore, we have little confidence that the interesting patterns that we saw in Figure 7 are due to a status difference in gender within these task groups. Some other gender dynamic may be shaping men's tendency to use inward- and women's to use outward-directed humor.

TABLE 2: A Typology of Humor in Task Oriented Groups

Function of Humor for the Group:	Cohesion-Building	Differentiating
Direction of Humor Target:		
Inward-Directed	Group-Directed	Self-Directed
Outward-Directed	Outsider-Directed	Member-Directed

GROUP CONTEXT AND HUMOR CONTENT

Another advantage to disaggregating humorous speech by content is that it allows us to more precisely specify the relationship between function and form. In our earlier review, we argue that, to the extent that joke telling is a cohesion building exercise, we would expect to see more of it in heterogeneous groups. Our event history analysis did not support that formulation. However, within our new content-sensitive framework we argue that the most direct way to increase group solidarity is to use outsider-directed humor. Accordingly, we propose the following:
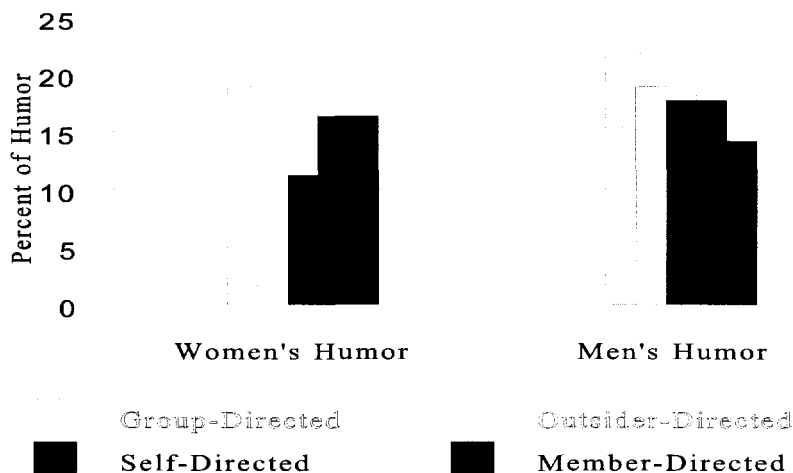
Proposition 10: Group heterogeneity will increase outsider-directed humor.

Figure 9 provides some preliminary support for this idea. Outsider-directed humor is in fact a higher percentage of humor in mixed-gender groups than in either all-male or all-female groups (20.7% as opposed to 14.58 and 7.14 percent respectively, Chi-square $= 4.19, p < .05$).

TIMING AND HUMOR CONTENT

Earlier in this paper we note the scarcity of dynamic theories of interaction. Our event history analyses of these data suggest that the pattern of humor use systematically varies across the course of these conversations, with humor showing a slight spurt at the very beginning of the conversations, dropping to lower rates, and then steadily increasing across the course of the discussions. Drawing on the theories about the functions of humor, along with knowledge about the actual timing of humor in these groups, we make several proposals about the content of the humor in these stages of task group discussion. First, we anticipate that humor with a self-referent will be used during the "meaning-making" stages of the group conversation as group members jokingly volunteer information about self and begin to develop and assert a collective identity. Second, we expect that group members will use differentiating humor to establish a status order to organize their task activity. Third, we expect that cohesion-oriented humor will be used primarily in service of the emerging group identity. Consequently, we make the following predictions about the timing of humor in task groups:

FIGURE 7 : Types of Humor Use Among Men and Women in Mixed Gender
Groups

Proposition 11: Humor offered early in the discussion will be proportionately more self-directed than other-directed.

Proposition 12: Differentiating humor will be used with decreasing frequency across the course of the conversation, as the structure of the group becomes better defined.

Proposition 13: Cohesive humor will be used with increasing frequency across the course of the conversation as group members develop a sense of collective identity and affective attachment to the group.
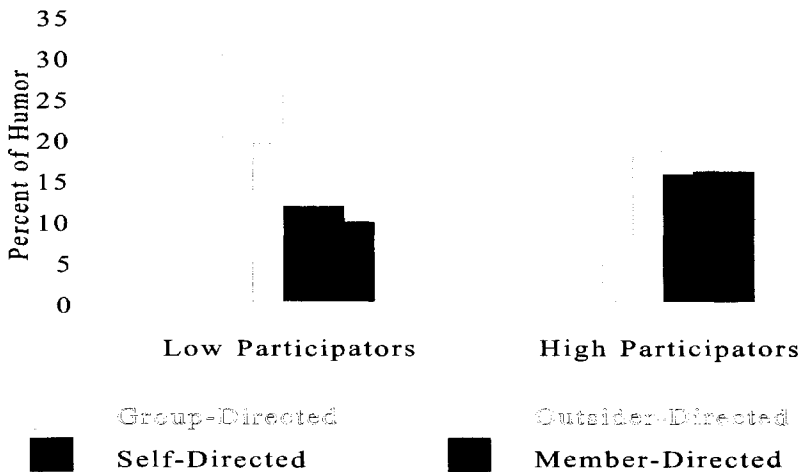
Finally, we consider the contagious effects of humor. If, as we expect, differentiating humor often comes in the form of masked criticism or self-deprecation, then we think it is less likely to be contagious than cohesive humor. However, when humor *is* contagious, it will be more likely to be contagious *within form* — with self-deprecation begetting self-deprecation, outsider jokes begetting outsider jokes, etcetera, as groups develop a local culture and begin to learn the accepted/successful strategies for amusing each other.

Proposition 14: Cohesion-building humor will be more contagious than differentiating humor.

Proposition 15: Humor contagion will be form-specific, resulting in clustered episodes of humor within a similar form (e.g., cohesive/other-directed).

Unfortunately, the number of humor events in each of our four types are small enough to make dynamic analyses of the sort specified by Propositions 11-15

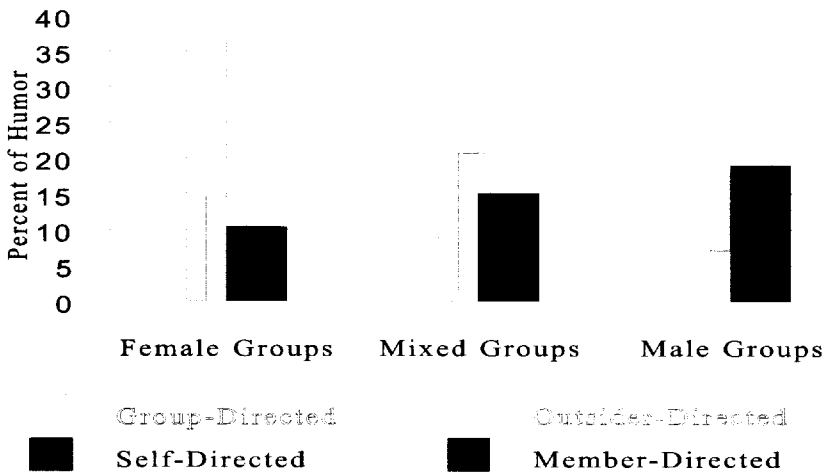FIGURE 8 : Types of Humor Used by High and Low Participators

unfeasible with our 29 group discussions. Exploring these ideas will have to await the coding of larger corpuses of task oriented group discussion. Now, we turn to a brief discussion of what we know from the analyses that are possible with our current data.

Discussion

Mulkay (1988) describes humor as a social action arising out of a real or imagined dialogue. Yet, there are few systematic studies of the spontaneous use of humor within social dialogue. Fine (1984) points out that a teller and audience are required component of humorous discourse. The present analyses look at the relation between these components by examining attempts at inspiring amusement. Our unit of analysis was an "evocative transaction" — an exchange of humorous bids and supportive (or unsupportive) responses. Because event history regressions allow us to analyze events as the unit of analysis, they are ideal for developing models that truly describe situated interpersonal transactions, rather than persons or groups.

In the present paper we took the opportunity to study the dynamic occurrence of humor during group conversations. We found strong evidence for taking into account the timing of humorous interaction. Future work in this area should also be concerned with such dynamics and time dependence. This poses a problem because with elaborated content coding of what are already rare events (humorous remarks, in a task group setting), even a reasonable size data set gets quickly

FIGURE 9 : Types of Humor Use in Same and Mixed Gender Groups

attenuated. We hope that the theoretical framework here will provide guidance to usefully limit the potential state space and create a starting point for future dynamic analyses of humor.

For while statistical methods now allow us to focus on the correct unit of analysis, we find that theory lags behind. There is a rapidly growing body of research in the social science of humor, but we find the current humor literature to be of limited use in developing a detailed understanding of humor in conversational interaction. Nonetheless, when we combine key ideas from the literature on the social functions of humor with the more developed theoretical ideas in the sociological social psychology literature on status and emotion, we are able to develop a more general set of propositions about the role of humor in the status dynamics of task group interaction.

We propose that humor serves as a mechanism used by both high and low status group members in a group to establish and maintain relationships during the course of group problem solving. The types of humor used varies by position of the speaker, by group context and over time. A more detailed content coding of the 375 humor episodes analyzed here provides tentative support for some of the propositions in our proposed theory. We hope that future work will further refine and provide independent empirical tests of these ideas.

Finally, we point to an interesting puzzle: there are substantial gender differences in the content of humor that is used in these task groups, especially within all male and all female groups. These differences do not seem obviously status related, but signal a fairly different pattern of interaction for men and

women, especially in the single-gender groups. In particular, women's frequent use of group-directed humor when in all-female groups, which shifts to a higher use of outsider-directed humor in mixed gender groups is an intriguing pattern. While we have no ready explanation for it at this time, it seems an interesting avenue of exploration for those who's central interest is the production and appreciation of humor itself.

Notes

1. For this reason, Freud (1905) speculates that joking is particularly suitable for attacks on high status and powerful—those who are otherwise protected from direct confrontation. In contrast, Wilson (1979) claims that less powerful people are not free to ridicule their superiors face-to-face. Rather, they must reserve their mockery for contexts in which the objects of their derision are not present. This latter view is more consistent with most current theories of humor as aggression. These theories usually view aggressive joking as a mechanism through which the powerful keep underlings in their place.

2. This finding is somewhat inconsistent in the empirical literature. The inconsistencies may indicate shifts in gender related behavior over time. For example, Cantor (1976) finds that in a laboratory study of reactions to humorous stimuli, both men and women have greater appreciation for humor that disparages women.

3. Gender is not a status characteristic in all settings, and may be losing its hierarchical meaning in modern undergraduate populations (see review in Ridgeway & Smith-Lovin 1999). However, the data that we will use were collected in South Carolina in the early 1980s; many analyses of these data conclude that gender does act as a status characteristic within this population and this setting (Smith-Lovin et al 1986; Smith-Lovin & Brody 1989; see review in Skvoretz & Fararo 1996).

4. Subjects are from a subject pool that included any students in sociology classes who submitted a card expressing their interest in volunteering for research. Subjects from the pool received no course credit or subject payments in exchange for participation. Since the subjects indicated age, race and gender on their cards, it was possible to minimize variation in characteristics other than gender, and to create groups in which gender composition systematically varied.

5. Overall inter-coder reliability is fairly low among humor judgments of our four coders (one male and three female), with inter-coder agreement rates in the range of .50 to .60. The male coder did not have lower agreement rates with the three female coders than they had with each other, revealing no observable gender differences in the perceptions of these admittedly mundane forms of humor. In previous research (reviewed above), the largest gender differences are found in the appreciation of sexual and gender based humor, neither of which was particularly likely in these groups of strangers who knew they were being videotaped. The modest inter-coder reliability in the difficult task of identifying unsuccessful but intended humor is the reason that we adopted the conservative procedure of requiring agreement from all four coders. We argue that this conservative

criterion of agreement by four "culture experts" means that the undergraduates in the interacting groups would have almost certainly have perceived the utterance as a humor attempt even though they failed to laugh at it.

6. When laughter by group members other than the speaker occurred, it was quite generalized. There were no instances in the data where one or two group members laughed, but the mirth was not shared by the larger group.

7. Plotting techniques and statistical comparison of nested models are two different approaches for diagnosing the preferred model for distribution of transition rates in a data context (Hannan 1989). For example, the Gompertz model implies the logarithm of the hazard is a linear function of the waiting time (Tuma & Hannan 1984:210), while the Weibull model implies that the log-hazard is a linear function of the logarithm of the waiting time (Tuma & Hannan 1984:211). Thus we plot the estimated log-hazard against waiting time and against the log of waiting time to compare the fit of the two models to our data. In addition, we statistically compare the fit of a variety of nested parametric models (e.g., Gamma, exponential, log-logistic, Weibull). These diagnostics converge on the Weibull as the preferred model for these waiting times.

8. We also ran these regressions using the distribution-free Cox' proportional hazards model, which does not allow parameterization of the time dependence. The results of these regressions are consistent with our other analyses, but Cox models limit what we can say about the dynamics of this process. Accordingly, we chose to report the Weibull models in order to characterize the timing of humor in a systematic way.

9. For the sake of discussion clarity, we interpret the coefficients in terms of their influence on the *rates of humorous remarks*. A variable that increases the length of time between jokes simultaneously decreases the hazard rate of humor. Thus, the signs of the coefficients in Table 1 can be reversed when considering their impacts on the risk of humor.

10. Additional analyses also show that men's humor is more likely to be successful than women's humor. However, that is not directly tested in Table 1.

11. Some of the control variables, of course, deal with the history of the conversational roles as they develop. These variables have little or no variance during the early part of the conversation.

12. Nancy Walker (1988) reaches a similar conclusion from an entirely different disciplinary field. Based on a critical analysis of women's humor in American culture, Walker (1988) argues that women's humor, like minority humor is expressed only within group — never in mixed company.

13. These scope conditions may be more properly considered initial conditions of the theory, rather than scope limitations (see a discussion of this distinction in Webster 1999). They are not required to support the logic of our argument as are scope conditions traditionally, but follow instead from the empirical context that provided the basis for much of the present generalizations. We consider these limitations appropriate, given the conditions of the empirical observations from which the propositions are developed. We also note that most of the more general theory from which we draw *does* depend logically on more or more of these conditions. However, we also consider them to be

preliminary, and subject to future investigation to determine whether they are, indeed, necessary for the operation of the proposed processes.

14. Affect control theory has the most precise statement of the affective meaning of humor production. Social acts like "amuse" and "laugh" are high on evaluation (good/bad), potency (powerful/powerless) and activity (lively/quiet). Jokes that are more pointed ("laugh at") are more negative on evaluation, but still very powerful and active and are therefore still predicted behaviors for those in leadership roles, especially as a social control mechanism.

15. More precisely, Lovaglia and Houser (1997) argue that high status individuals who experience positive emotion will be more open to influence from low-status others, while low status members experience negative emotion that makes them more resistant to influence from high-status others. The operations of these two effects combines to reduce status differences in influence. We assume that in collectively oriented face-to-face groups the emotional experience of group members will be linked such that strong positive emotions among a subset of members are unlikely to coexist with strong negative emotions with others. Therefore, we assume that most status equalizing will come from the positive emotion of the high status members.

16. Perhaps instructions encouraging or discouraging humor could be used to create the relevant conditions. Alternatively, the presence of a confederate who interjected humor might prime the humor pump, given the contagious nature of humor that we observe in our naturally occurring conversations.

17. To be a bit more honest, we attempted to develop codes for humor content at an earlier stage of this project (prior to the event history analysis), and were never able to achieve an acceptably reliable measurement protocol. After considering the results of the event history analyses and drawing on the literature on status and emotion, we are able to develop a theoretically based content coding system that can be reliably assessed (see footnote 19).

18. Propositions 6 and 7 would be definitionally linked, were it not for a third category of "other" humor.

19. Two coders actually rate each of the humorous episodes on two categorical dimensions: the function of humor for the group: (1) cohesion-building, (2) differentiating or (3) other/unidentifiable, and the direction of the humor target: (1) inward-directed or (2) outward directed (see Table 2 below for the full typology). For reliability of nominal scale content coding, the most appropriate reliability measure is Scott's (1955) inter-coder agreement index, $\eth$, which is based on the distance of the obtained coding from what would be expected by chance (and does not allow inflated estimates of reliability due to skewed distributions into categories). We calculate a reliability rating of $\eth=.71$ based on our two ratings of the entire sample. After the reliability check, the discrepancies were resolved by discussion until consensus was reached.

20. During the course of observing and coding the humorous episodes in the transcripts, we note recurring patterns of joke-making across the groups that seem to reflect of the status-organizing processes we describe in our theory. Consequently, the theory of humor we develop here derives from the logic of the theories that we discuss in this section, along with patterns we inductively observe in the data themselves. Accordingly, the

analyses presented in this section cannot be seen as tests of the theory, rather as illustrative of the process we argue takes place when humor operates in goal-oriented group interactions. A true test of our new ideas must await further data.

21. In the context of these discovered comparisons, one could argue that tests of statistical significance are not meaningful. We present them here for heuristic use only, to give some rough additional information about the size of the differences.

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