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BITING LANGUAGE AND FIGHTING FRIENDS: SARCASM IN CONVERSATION

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BITING LANGUAGE AND FIGHTING FRIENDS:
SARCASM IN CONVERSATION

(Spine title: Biting Language and Fighting Friends)

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by

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Graduate Program in Psychology

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Master of Science

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Abstract

This thesis examines sarcasm in written dialogues between friends. Previous studies have shown that the use of irony “mutes” a negative message, compared to a direct, literal counterpart (Dews & Winner, 1995). It is plausible, however, that with blatant aggressive sarcasm the negative communication would override any possible muting. We used a realistic conversational format that differs from traditional context building vignettes with sarcastic punch-lines. Male and female participants read the same dialogues between male-male and female-female friends and provided ratings of their impressions.

Additionally, the participants were asked to produce continuations of the conversation.

We find that muting effects exist in blatantly aggressive sarcastic dialogue compared to non-sarcastic equivalents. Additionally, the production task revealed no differences in the use of sarcasm, countering the oft-cited prediction that males use more sarcasm than females. However, in line with some of the speculations on gender, female interlocutors within the dialogue were perceived more negatively when using sarcasm compared to male interlocutors in the same condition.

Keywords: Nonliteral language, Sarcasm, Aggression, Gender Differences, Conversation.

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Biting Language and Fighting Friends: Sarcasm in Conversation

We reveal ourselves and come to know others through the language we use.

Consider the following exchange:

Karen: You took my Mp3 player.

Jane: Yea, why wouldn't I? You have the greatest taste in music in the world, after all.

Karen: I know you took it, so give it back.

Jane: Listen Sherlock, I didn't take your precious Mp3 player.

That the two are having a disagreement is clear. It is also clear that Jane's biting language is not meant to be taken literally as invited by the hyperbolic use of the words "greatest taste in music in the world" and the use of words such as 'Sherlock' and 'precious'. Jane's choice of sarcasm (as opposed to more direct insult) may also provide less obvious additional information about herself as well as the nature of the relationship between Karen and Jane. For instance, it seems likely that the two know each other well (Lampert & Ervin-Tripp, 2006), and the use of indirect language may suggest that Jane is willing to take the risk that her comments might be misunderstood by Karen (Hussey & Katz, 2006). Beyond the conversation proper, a silent third party or omniscient reader may call upon certain culturally shared notions of how females should or do speak in conversation, how females act aggressively to other females and how these evaluations might differ in other contexts like with male speakers (Katz, 2005). All of the foregoing examples are potential interpretations prompted by considering extralinguistic cues associated with Jane's linguistic choice of sarcasm. This thesis will investigate the perception of sarcastic comments relative to more direct, non-sarcastic comments. Additionally, this research will investigate perceptions of the gender of the individual

uttering the comment, shared assumptions of male and female participants in conversation and individual differences in perception and use of such sarcastic statements.

Theories of sarcasm

Irony, verbal irony and sarcastic irony are some of terms that have been used interchangeably by researchers to qualify the construct of sarcasm. Each term evades a concise definition because there is some question as to whether or not they represent the same psychological construct (Attardo, 2001b; Lee & Katz, 1998). Broadly stated, sarcasm is a form of irony and irony, in general is thought to involve saying one thing, but intending the opposite (Attardo; Kotthoff, 2003; Macdonald, 2000). That sarcasm is a 'form of irony' has implications for how it is dealt with by researchers. Within the existing corpus, sarcasm is examined under the broad canopy of theories of irony (Toplak, 1996), providing impetus to group irony and sarcasm together (Eisterhold, Attardo & Boxer, 2006). Before addressing the pragmatics of speaking indirectly as well as differences between sarcasm and irony, this introduction will first examine the history of research on the two and the relevant psychological, linguistic and philosophical theories that have emerged over the past thirty years.

Research in the area of non-literal language, and irony and sarcasm in particular, began with a critical look at discourse. According to Grice (1975) individuals follow implicit and logical maxims when communicating with others. These maxims involve being truthful, informative, relevant and clear in any communication. What is most interesting to sarcasm researchers are the instances where a speaker chooses to break conversational rules for his or her own purposes.

The standard pragmatic model or traditional model of irony takes this purposeful, conversational rule breaking as a starting point for addressing irony comprehension. Interlocutors, by the very nature of the task they are participating in, that is speaking in turns, act cooperatively. As a participant in conversation, we assume our conversational partner is being truthful and literal. This basic cooperation holds even if two speakers are arguing. According to this position, sarcasm is a unique violation of this cooperative assumption that it must be perceived through a step-by-step process. To grasp the intended meaning, the literal meaning is invariably processed first. One or more cues accompany the statement and suggests to the listener/victim that a literal interpretation is inadequate and a non-literal interpretation is required. Cues to an ironic interpretation can be vocal (the so-called ironic tone of voice; Rockwell, 2000), or invited by linguistic and extralinguistic knowledge. A search for a context-appropriate non-literal interpretation follows. Implicit in this theoretical approach is that reaction time data will demonstrate longer processing times and responses to sarcastic stimuli than to non-sarcastic comments. However, although controversial (see Schwobel, Dews, Winner & Srinivas, 2000), there is a body of research that has failed to find longer reaction times for sarcastic statements (e.g., Gibbs, 1986). Nonetheless, it is clear also that grasping the sarcastic intent involves processing the literal sense (see Dews & Winner, 1999).

Other theories explore the content of a sarcastic utterance. For instance, echoic mention (Sperber & Wilson, 1995) and echoic reminder theory (Kreuz & Glucksberg, 1989) describe irony as an echo of a previous statement or of some desired but unattained state of affairs. Take for instance the following example: after receiving an email to meet for lunch with a friend, Jim goes to his favourite restaurant only to find that it is packed

and there are no tables left. Jim mutters, "That's just great" in response to the circumstance. Echoic reminder theory would explain that the statement alludes to the Jim's unmet expectation that he was to have a pleasant lunch with a colleague. Additionally, mention addresses the idea that Jim is using sarcasm to express an attitude, an important pragmatic function of sarcasm that was overlooked in traditional theories like the standard pragmatic model (Attardo, 2001b).

Pretense theories (Clark & Gerrig, 1984) further address the speaker's role in conversation and specifically why he or she would chose to say something indirectly. The ironist is thought to be playing a role, putting on a mask of a person with naive views, and acting the character in his or her tone of voice, actions and the content of their message. Central to these theories is that the words a sarcastic individual is speaking do not correspond with his or her own views but with the views of a persona that he or she has adopted. Pretense then trumps an implicit Gricean rule that one should speak as his or her own person instead of as a dissembling character. Speaking with pretense suggests to the listener that the speaker intends to convey some attitude or judgment about the circumstances while avoiding any blame that comes with more offensive, direct and personally hurtful statements (Haiman, 1998). Sarcasm operates in this manner only if the listener/victim grasps the initial false pretenses.

The models discussed above lack mention of specific individual variation in the perception of sarcasm. Other models fare better with respect to individual differences. The salience model (Giora & Fein, 1999) asserts that those meanings which are most salient to an interlocutor will be accessed first. This salience is based on experience. That which is conventional, frequent and familiar is salient to a hearer (Norrick, 1993) and can

thus vary from person to person. Furthermore, salient meanings first come to mind in any given situation and are always present. Therefore, one individual may first access a sarcastic interpretation while processing the statement 'thanks a lot', whereas another could take it in its sincere, literal sense.

The preceding theories can be contrasted with a parallel constraint-satisfaction approach (PCS; Katz, 2005; Kunda & Thagard, 1996) a well-established cognitive view of language (and indeed non-linguistic) processing, that can accommodate some of the findings of the previous models. Proposed initially as a model of perception, PCS has been extended to the processing of language and problem solving and more laterally as an explanation for impression formation and stereotyping. This approach assumes that we process, in parallel, sentential and contextual information on a moment-to moment basis, selecting the likely interpretation from the information available. Thus, sentence level information or contextual information being processed can drive the meaning to either a literal or non-literal interpretation, depending on the strength and availability of cues (or constraints). One advantage to this model is that it allows the consideration of both linguistic and extralinguistic constraints such as those found with broad social categories (e.g. gender and profession) as well as the behaviours unique to that individual (behaviour, personality). The parallel constraint-satisfaction approach thus incorporates who, what, where and how something is said in the interpretative process. Consider the following example:

Brittany: "Haven't you heard of 'do unto others what you would have them do unto you?'"

Sara: "Thanks Mother Teresa".

In this example, Brittany may be conscious of the history she shares with Sara (e.g., that they are friends), the statement itself, her expectations of Sara (e.g., that Sara is prone to sarcasm), the attitude Sara is conveying and the salience of the sarcastic statement. Additionally, Brittany's previous experience with sarcasm might influence her interpretation of the statement or what she will say in response to Sara. Interpretation follows: either Sara literally thinks Brittany is Mother Teresa, she means it as an ironic compliment, or her intent is sarcastic, designed to ridicule.

Pragmatics of sarcasm and irony in conversation

Sarcasm and irony have been postulated to have degrees of ambiguity (Dress, Kreuz, Link & Caucci, 2008) and comments of this nature are still open to a number of feasible interpretations. It seems that any meaning derived from a sarcastic utterance is "always a best guess" (Eisterhold et al., 2006, p.1241). Rather than defining it outright, researchers have provided a catalogue of possibilities for what sarcasm does. However, naming its role in communication is elusive given contradictory functions. For example, in different instances, sarcasm has been reported to both reduce and enhance the critical effects of a sentiment (Colston, 2003). Nonetheless, if sarcasm served no purpose in conversation, there would be no reason to choose it over a literal and computationally easier direct comment. Communicative goals of speaking indirectly that are supported by empirical research include: humor (Dress et al., 2008; Leggitt & Gibbs, 2000) rapport building and identifying an in-group (Lampert & Ervin-Tripp, 2006), aggression (Colston, 1997), mocking (Toplak & Katz, 2000) and tempering criticism or muting the meaning (Dews & Winner, 1995).

The most commonly cited pragmatic effects have been outlined by Dews and Winner (1995) whose initial research found that an ironic comment acted as a buffer to mute its negative connotations. When these researchers changed a comment from the direct "what a lousy worker you are" to a sarcastic "what a good worker you are", participants rated the latter as less critical. Dews and Winner concluded that irony mutes negative meaning because of the positive tinge invited by the evaluative tone.

The positive effects of sarcasm (e.g., that it portrays less aggression than a direct comment) can be explained, in part, by the maintenance of 'face' and politeness in communication. 'Face' is the front that an individual wants to convey socially about him or her self and can be maintained through verbal and non-verbal choices (Watts, 2003). It is possible to use sarcasm to criticize and still maintain positive face because of its inherent indirectness and ambiguity relative to more direct statements. Non-literal language provides a number of avenues of interpretation and the listener can, to some degree, choose one to pursue (Kotthoff, 2003). That indirect language maintains positive face could explain why sarcasm or irony could diffuse a potentially aggressive situation by injecting humor and seeming more polite. The explanation also suggests that buffering effects may break down with blatantly negative indirect comments. Researchers suggest that though sarcasm may save face, it might be more appropriate to say that the positive meaning of a sarcastic statement buffers some negative connotations (Dews & Winner, 1995). This buffering may work in some situations, yet may also break down in others. For instance, Colston's (1997) research suggests that, at times, sarcasm might seem more hurtful.

To elaborate on some of the mixed pragmatic effects, this thesis will consider the differences between sarcasm and irony. In this way, it will be demonstrated that sarcasm is a distinct psychological construct. These differences have relevance for stimuli, methods and models relevant to sarcasm and irony.

Differences between sarcasm and irony

The extant theories discussed above as well as the proposed pragmatic effects come from research that blends both sarcasm and irony together without duly considering important differences between the two. For instance, Clift (1999) has criticized these models for ignoring the discourse environments in which these forms of language tend to appear. As she rightly points out, most of the research that tests these models involve a context building vignette with a single ironic statement as a punch line. In line with Clift, I argue that sarcasm's most consistent discourse environment is that of a conversational exchange. In line with Bryant and Fox Tree (2005), who suggest that researchers in the area must address the differences between irony and sarcasm, this thesis will emphasize sarcasm's primary role as a linguistic device emerging from conversation that is chosen for its verbal aggression.

One distinction between the two is that sarcasm, unlike irony, conveys some negative attitude or appraisal and involves a victim of the verbal barb (Channon, Pellijeff & Rule, 2005; Clift, 1999; Lee & Katz, 1998; Kreuz & Glucksberg, 1989; Shamay-Tsoory, Tomer & Peretz, 2005). In contrast, the affiliative qualities of irony promote positive relationships between individuals (Clift, 1999; Norrick, 1993). Take, for example the following scenario. A lady is carrying a box of a dozen donuts to an elevator where she meets an acquaintance and, smiling, says, "I'm really hungry today". To which her

friend replies: "you've got all the food groups there". The two laugh at the ironic appraisal of the situation, while both knowing that doughnuts are no substitute for an adequate meal. These friends might continue conversational exchanges of this nature, thus building rapport based on a joking relationship.

In contrast, consider the sarcastic counterpart of the preceding example to further distinguish sarcasm and irony. Take, again, the example of a lady carrying a box of doughnuts who steps onto the elevator with an acquaintance. This time, the acquaintance looks at the box of a dozen doughnuts and says "way to stick to your diet". The specific victim is now the lady with the doughnuts who has ostensibly failed dietary self-restraint and the aggressor's intent is to make her acquaintance feel regretful. Having an aggressor and victim emphasises both the intentional and personal nature of a sarcastic speech act (Haiman, 1998). It is evident from these examples that the degree of ridicule associated with sarcasm is distinguishable from the ridicule in irony. That sarcasm attacks a specific victim is reflected in its etymology, from the Greek, meaning to gnash the teeth and rip the skin (Onions, 1976). Indeed, although there many possibilities for what sarcasm does, some researchers (e.g., Leggitt & Gibbs, 2000; Toplak & Katz, 2000) insist that sarcasm is chosen for the fundamental conversational goal of verbal aggressiveness.

What further distinguishes sarcasm as being borne out of dialogue rather than vignettes is that sarcasm also has a distinct tone of voice (Rockwell, 2000). This tone of voice differentiates irony from sarcasm as it provides a clearer marker for the speaker's intent (Attardo, 2001b). In fact, sarcasm as a punchline in written story form might be neglecting to some extent the information provided by this tone and other paralinguistic cues, such as exaggerated gestures. Nonetheless, using written dialogue, as in the present

study, is a first step towards assessing sarcasm in its most representative conversational form. The obvious markers for sarcasm, as Attardo indicated, can be translated into the written dialogue form of the present research by including exaggerated comments (e.g., oh yea) or through the use of hyperbole.

That sarcasm and irony are psychologically distinguishable concepts (Lee & Katz, 1998) prompts a consideration of the stimuli used within the existing corpus. Although Dews and Winner's (1995) first demonstration of the effect was with irony, the concept of 'muting' has been expanded to include sarcasm. For instance, Matthews, Hancock and Dunham (2006) used vignettes with one friend (Dave) who is a skilled hockey player but fails to miss an easy shot. Another friend later quips to Dave "Great shot Dave" or "Wow, Dave, you suck". Researchers demonstrated greater humor in the sarcastic comment compared to the non-sarcastic one. Importantly, this vignette involves built in situational irony (e.g., skilled player missing a shot) along with verbal irony, but fails to capture the verbally aggressive, character attacking essence of sarcasm. Although it does have a victim, the sarcastic comment is more light-hearted, used possibly to soften any of Dave's embarrassment by providing humor to the situation.

Consider also Pexman and Olineck's work (2002) in which they used the following:

Lorraine composed a letter to her husband Bill this morning to tell him she was leaving him. Her sister Alice saw the letter and later, to her friend, Alice commented:

"Her love is a blossoming rose".

This ironic comment was rated as more polite than "Her love is a withering rose".

Though a dark comment, it does not adequately capture the nature of sarcasm. "Her love

is a blossoming rose” is not blatantly aggressive, and though it has a victim, she is far removed from the circumstance in which the quip is uttered. This example is further complicated by the fact that the punchline is a conventional metaphor. Metaphors like this serve their own role in conversation making it unclear what linguistic device is relevant in Pexman and Olineck’s (2002) work.

The present study aims to capture sarcasm at its most aggressive and therefore most representative. To do so, blatantly aggressive dialogues were constructed. The dialogue form was used because of the literature cited above that suggests that sarcasm is borne of dialogue. Clift (1999) indicates that researchers are too concerned with the “ironic sentence either in isolation or in the context of constructed text” (p. 532). From this, she states that research produces models and theories too narrow in scope and an “exploration of its functions is most clearly revealed by investigation of its basic site: conversation” (p. 523). Consider a snippet of dialogue used in the present study.

Dave: You lied about me!

Ed: And you’re such an angel yourself.

Ed’s (the aggressor’s) comment is sarcastic because it is hyperbolic assessment of Dave that is not meant to be taken literally. Ed does not believe Dave is literally an angel, but intends the opposed meaning which implies that Dave is not well behaved. This comment fills the role of sarcasm as borne of dialogue (Kotthoff, 2003), with a victim and an aggressive tone. Furthermore, Ed’s comment has an intentional and personal nature (Haiman, 1998) lacking in Pexman and Olineck’s (2002) and Matthews et al.’s (2006) work. Additionally, although the foregoing was only a snippet of dialogue, the conversations in the present study include ten sarcastic turns, thus addressing Clift’s

(2003) concern that the extant research focuses too narrowly on only one sarcastic quip. Up until now, experimentally controlled dialogue with a number of sarcastic instances, instead of just one punchline, have not been used.

Through the use of clearly sarcastic dialogue the present study implements its first goal: that of assessing the pragmatic effects using suitably sarcastic versus equivalent non-sarcastic situations. In this way, the research will demonstrate whether such aggressive sarcasm shows a similar pattern of muting the meaning effects as the psychologically distinct construct of irony.

Effect of Context: Perspective

It has been argued that the interpretation of non-literal language and sarcasm in particular requires not only semantic, but also pragmatic and contextual knowledge (Blasko & Kazmerski, 2006). The importance of pragmatics should draw research to the relevant contextual variables. The present study will explore the contextualized effects of perspective: the effect of a sarcastic comment from the point of view of the individual who speaks sarcastically (the aggressor) and the point of view from the person who receives the sarcastic comment (the victim).

Pertinent to the present paper is the consideration of sarcasm in the context of aggression between friends. The relative suitability or politeness of an expression of anger is thought to be moderated by context (Van Kleef & Cote, 2007) and interlocutors. (Toplak & Katz, 2000). An asymmetry in the aggressive effects of sarcasm has been reported, suggesting it is more appropriate to consider dynamically both interlocutors in a given conversation rather than solely the content of a message or one speaker's perspective (Katz, Blasko & Kazmerski, 2004). The aggressor, that is the individual

uttering the sarcastic statement, is perceived as having verbally aggressive and antagonistic intentions. Additionally, the aggressor is perceived by participants as intending to be offensive and mocking (Toplak & Katz). Research suggests that there is not an isomorphic correspondence of perceptions between interlocutors. For instance, the victim has been reported to have stronger negative emotional reactions to a sarcastic statement (Leggitt & Gibbs, 2000) or to experience a greater negative impact than what a sarcastic speaker expects (Toplak & Katz). If there is any positive meaning associated with a sarcastic message, it is more likely to be perceived by an aggressor (Toplak & Katz) as opposed to a victim or third party. One aim of the study reported here is to see whether a sarcastic or non-sarcastic manipulation leads to an asymmetry in the perception of sarcasm in a conversation between friends.

To study possible perspective effects, the present study will address two variables implicated by previous researchers (Dews & Winner 1995; Matthews et al., 2006): perceived humor and politeness. Attardo (2001a) provides impetus for suggesting that humor might differ based on perspective. He describes two roles of humor in conversation: humor as something to be comprehended and humor as something performed. Consider his example: after a student provides an incorrect answer in class, the professor remarks sarcastically "that was brilliant". Although the student (victim) might comprehend that the professor (aggressor) is attempting humor in a situationally removed sense, that victim will not ultimately appreciate this performance. Humor performance, as in the present study, involves two interlocutors as well as some recognition of the aggressor's malevolent intentions on the part of the 'victim'. This recognition of intention by the victim might override the humor he or she would perceive.

Conversely, the sarcastic aggressor may be perceived as relishing in his performance, prompting participants to rate this individual as finding more humor in his comment.

Politeness will also be considered based on the perspective of victim and aggressor. Although both have been used to explain the pragmatics of sarcasm (e.g., Dews, Kaplan & Winner, 1996), politeness differs from humor. For instance, one can be humorous but not polite. Moreover, any politeness associated with sarcasm is because it allows one to “take a non-committal attitude” to what one says in conversation (Attardo, 2001a, p. 172). It is apparent that the politeness functions of sarcasm are not sufficiently explored and may fall apart based on perspective taken or, more broadly, in blatantly aggressive situations.

Gender differences

It is not only the contextualized perspective that matters, but gender, individual personality characteristics, content of the message and the social and culture milieu in which the message is embedded that are also important (Katz, 2005). For instance meaning of a sarcastic message is moderated by speaker’s social status (Okamoto, 2002) and occupation (Katz & Pexman, 1997). Particularly relevant to the present study is gender of the interlocutors as they relate to sarcasm and aggression. This specific variable has been implicated in both the perception and production of sarcasm.

Popular conjecture in psychological, philosophical and linguistic research suggests some pragmatic aspects of language are divided along gendered lines. Broadly characterized and often cited, these differences are thought to reflect the notion that males and females have different communicative styles as enhanced by adherence to their gender role (Tannen, 1998). These differentiated styles are best conceptualized by the

gender-as-culture hypothesis, which states, early in life, males and females learn, from their in-groups, culturally appropriate ways to speak, as well as the consequences for following or breaking the rules (Maltz & Borker, 1982). As a result of these internalized, culturally guided maxims, males tend to be forward and competitive in their speech, whereas females spend more time hedging (Mulac, Bradac & Gibbons, 2001) and conversing in a supportive, relational and polite manner (Colley & Todd, 2002; Jorgensen, 1996). Furthermore, males are more likely to tease and insult (Lampert & Ervin-Tripp, 2006; Thomson & Murachver, 2001) whereas women are more likely to avoid such face-threatening situations.

Borne out of the gender-as-culture theory, is the notion that females might be more sensitive to verbal transgressions, such as the aggressive nature of a sarcastic comment (see Jorgensen, 1996). Conversely, males might appreciate this linguistic device as it is used to tease and insult. The following section will examine the two levels of analysis as proposed by language researchers: gender differences in perception of the same comment and, more broadly, shared social stereotypes in communication.

Perception. Internalized gender roles can be revealed in the perception of certain types of comments like sarcasm. For instance, Lampert and Ervin-Tripp (2006) suggest that men perceive sarcastic ribbing as an affirmative experience whereas women are less likely to perceive it as such. Men are more likely to find humor in a sarcastic quip where women appraise the remark as offensive and bothersome (Jorgensen, 1996).

To some degree, a division along gendered lines when it comes to sarcasm is socially agreed upon. Both male and female participants see sarcasm as the purview of

males (Colston & Lee, 2004; Katz, Blasko & Kazmerski, 2004), suggesting socially shared appraisals of what is and is not appropriate in conversation.

Shared norms of behaviour in communication. Males and females do not simply perceive comments differently, but call upon shared stereotypes to agree on how each other should act in conversation. Recent empirical work shows that both male and female participants agree, when measured on Likert scale ratings, that males are typically agentic whereas females are interpersonally sensitive, putting others' needs before their own (Prentice & Carranza, 2002). These findings translate well into the idea that males and females speak differently as suggested by the gender-as-culture hypothesis. For instance, Prentice and Carranza (2004) demonstrate that all participants were uncomfortable accepting cynicism or arrogance in women and would thus rate these traits as less desirable. Conversely, the same traits were seen as more acceptable with men.

The work of Prentice and Carranza (2002; 2004) along with the hypothesis that language is divided along gender lines has implications for the present research. It can be predicted that both male and female participants will give more latitude for men to be sarcastic and aggressive in conversation. Relaxed rules in aggressive contexts for men mean more intensive application of those rules for women (Prentice & Carranza, 2004). This prediction is compounded by the idea that, when a woman violates a stereotype and shows an aggressive quality (e.g., cynicism), the act prompts more negative ratings than when she violates a stereotype and shows a positive quality (e.g., ability to play hockey; Bettencourt et al., 1997). In the present study, perception of male-male and female-female interlocutors will be examined in order to investigate, based on stereotyping, whether

participants are willing to 'punish' female interlocutors by rating them more negatively than males when using aggression and sarcasm in dialogue.

That women perceive a sarcastic quip more negatively than men and that participants agree on how women and men should act in conversation are two key elements emerging from the research on gender differences that will be considered in this thesis. This study will consider both the gender of the participants and the gender of the interlocutors in the dialogues presented to the participants as a variable. In this way, this thesis will demonstrate if perception differs as a function of participant gender or if it differs according to who is speaking sarcastically.

Production. It follows from the previous discussion that male speech is differentiated from female speech not only by perception based on gender and shared stereotypes, but also by reported quantitative differences in the use of sarcasm (Colley & Todd, 2002; Gibbs, 2000). There is, however, a dearth of empirical evidence on sarcastic production. Researchers have mainly reported results from an analysis of transcripts (e.g. Eisterhold et al., 2006; Gibbs, 2000). Gender differences in production of non-literal language and sarcasm are based on the idea that males are more willing to risk miscommunication in conversation (e.g., Hussey & Katz, 2006); this riskiness has its rewards as sarcasm can help bond or add humor. Hussey and Katz provide support to this general hypothesis by demonstrating that male participants were willing to risk being misunderstood by using novel, unconventional metaphor with unfamiliar male interlocutors whereas women did not.

A number of researchers predict that men are more likely to use sarcasm because of the aggression it conveys (e.g., Colston & Lee, 2004; Gibbs, 2000). Indeed, the

strongest and oft-cited conclusions based on predicted use of sarcasm come from the idea that sarcasm is aggressive (Colston, 2003) and risky (Gibbs, 2000). Moreover, Colston and Lee (2004) indicate that gender can be a “robust predictor of some effects of non-literal language usage” (p. 112). For instance, those authors report sarcasm is perceived as a male quality of speech when gender is not made explicit in experimental stimuli (i.e., when male and female names used as markers are avoided).

In an uncontrolled study analyzing transcripts of undergraduate students’ conversations, Gibbs (2000) estimated that males use twice as much sarcasm as their female counterparts. In line with the aforementioned hypothesis that men use more sarcasm because of its verbally aggressive nature, Gibbs reports that sixty-four percent of the critical, fault-finding sarcastic remarks were spoken by men whereas only thirty-six percent of women employed this type of non-literal language. Subsequent findings, however, are mixed. For instance, in a controlled study, males and females actual usage did not differ (Dress et al., 2008). Additionally, Eisterhold et al. (2006) report no gender differences in the use of ‘irony’ in conversation. However the ill-defined stimuli and methodological problems of this last study make interpreting their results difficult.

To address some of the contradictory findings, Dress et al. (2008) make the point that research such as that of Gibbs does not (and cannot) assess individual differences in the use of sarcasm because of the use of transcript data. In their study, Dress et al. indicate that those who report greater use of sarcasm tended to use it more in an experimentally controlled task. However self-report and actual sarcastic productions are only weakly related (e.g., Dress et al.), suggesting a disconnect between how much sarcasm participants report and what they actually produce. Perhaps in addition to gender,

individual differences might help explain some irreconcilable differences of sarcasm usage between males and females.

How participants define sarcasm might also be relevant when considering why they use this linguistic device. Dress et al. (2008), considering cultural relevance, examined regional variations in sarcasm usage based on the observation that participants in the northern United States (New York) would use sarcasm more than southerners (Tennessee) given southerners' qualms about impoliteness in speech. They found, as expected, that Northerners demonstrated more sarcastic completions in an open ended format. Moreover, Northerners admitted to using significantly more sarcasm on a self-report measure. The researchers explained some of their results based on the definitions of sarcasm that participants provided. Northerners mentioned humor significantly more often than did Southerners, suggesting diverging definitions of the construct of sarcasm, and possibly prompting Northerners to use it more, because of its perceived positive qualities. Given these findings, the present study will also ask participants to provide their definition of sarcasm.

Relational aggression

Recent research has suggested individuals differing in usage of relationally aggressive tactics (e.g., those likely to gossip or manipulate social relationships) may view the same sarcastic comment differently. Blasko and Kazmerski (2006) reported that a low relationally aggressive group of university students was more sensitive to a sarcastic comment, as they showed slower reading times at the end of a sarcastic, as opposed to literal, sentence. In contrast, a high relationally aggressive group demonstrated a greater ease of processing the negative sarcastic quip as compared to a

low relationally aggressive sample, suggesting relationally aggressive individuals have experience in dealing sarcasm.

To address some of the preliminary evidence of a relation between sarcasm and relational aggression, the present study will include an individual difference measure of this characteristic. Relational aggression is often overlooked by too narrow a view of aggression (Crick & Grotpeter, 1996), with researchers reporting increased aggression in men, but ignoring indirect relational tactics thought to be the domain of women. I would argue that sarcasm researchers are guilty of this oversight when indicating that males are the aggressive sex and therefore more sarcastic in nature (Gibbs, 2000; Colston & Lee, 2004). Including a relational aggression questionnaire might show reasons for why females might use sarcasm and thus provide insight on any gender differences in perception and production of sarcasm.

The present study

The primary goal of the present study was an investigation of the Dews and Winner (1995) muting the meaning effect, through the use of a more appropriate conversational format. Of prime interest is whether sarcasm will maintain its buffering/muting effects (e.g., appearing more polite, less hurtful) compared to direct aggression in the blatantly aggressive scenarios used here.

Postulates of the parallel constraint-satisfaction model, that context, salience and individual differences help an interlocutor select the likely interpretation from the information available, are relevant to the present paper. Therefore, in a more general way, the present study will also attempt to answer the following research questions: will perception of an aggressor's intent differ or be muted as a function of a) gender of

interlocutors b) type of aggressor comment (sarcastic/non-sarcastic) and c) perspective?

A secondary goal investigates the relation of individual differences in self-report sarcasm and relational aggression to the performance on the perception and production tasks.

Additionally, this research will assess whether or not both male and female participants will rate male and female interlocutors differently based on shared norms of how one should act in conversation.

In this study, participants will read sarcastic/non-sarcastic comments in the context of two male friends or two female friends communicating with one another. It is predicted that when interlocutors are female friends, their sarcastic comments will be viewed with greater negativity compared to male equivalents. For instance, it is predicted that when using sarcasm, females will be rated as less likely to resolve their conflict and appear more hurtful than males in equivalent situations using the equivalent language manipulation. If both the male and female sample show similar effects then we would obtain support the aforementioned agreed-upon (culturally shared) ideas of what is appropriate for each gender when they communicate. If male and female participants differ in the perception of sarcasm, we would also have evidence for gendered effects.

Production will be studied through the use of open-ended responses in which the participants will be asked to write how they think the aggressor and the victim will continue the argument. The frequency with which sarcastic and non-sarcastic continuations are employed will be scored. In this way, the current study will not only determine use by male and female participants, but whether sarcasm use differs as a function of gender of the interlocutors and language manipulation (e.g. sarcastic or non-sarcastic).

Method

Participants

Eighty participants (40 males and 40 females) from the University of Western Ontario completed the study. The mean age of the participants was 18 ($SD = 2.06$). For 30 minutes of their time, participants were given half a credit as part of their requirements in introductory psychology. For associated ethical approval see Appendix A.

Materials

Conversations. Eight conversations were created to represent the four conditions described below (each participant would see each condition twice). The conditions were: males speaking to males with one interlocutor (known as the aggressor) speaking sarcastically, males speaking to males with the aggressor speaking non-sarcastically and the equivalent with matched-gender female interlocutors. (See Appendix B). At the end of each dialogue, two lines were left blank and constituted the open-response portion of the study. One dialogue, for instance, detailed two friends arguing over the loss of an Mp3 player. Four booklets were created to cover all possible combinations of male-male, female-female speakers in sarcastic and non-sarcastic conditions across the eight scenarios. Each participant saw only one iteration of each dialogue (e.g., one version of the Mp3 argument) and dialogues were presented in the same order across booklets.

The conversations were constructed to create more appropriate sarcastic stimuli. Recall that, in the past, researchers often used short vignettes detailing everyday interactions (e.g., Katz, Blasko & Kazmerski, 2004). In the current study, stimuli were constructed to balance considerations of experimental control and ecological validity. Because sarcasm is borne out of that playful or not-so-playful turn taking in conversation

(Clift, 1999) it might not be represented accurately by static punch lines that follow a context-building paragraph. In this study, a conversational analog to context-building was employed. Accordingly, each conversation consisted of 10 sarcastic or 10 non-sarcastic aggressive comments, with the victim comments remaining non-sarcastic. The aggressor's comments were either sarcastic or non-sarcastic, thus constituting the experimental manipulation. The structure of the stimuli (with one victim and one aggressor whose language use constitutes either a sarcastic or non-sarcastic manipulation) is commonly used in the existing literature.

The dialogues were presented in booklet form with the following written instructions:

This booklet contains conversations of two friends in various conflict situations. Please read each conversation carefully, fill in the spaces at the end with responses that you think the friends would use and then answer the questions on the next page. Once you are finished with part one, move on to the next part attached in this booklet. Remember there are no right or wrong answers. Do your best. When you are asked a question involving a specific friend, make sure you remind yourself what that friend said in the conversation.

Two lines (one for the victim and one for the aggressor) were left blank at the end of the conversation for participants to complete (constituting the open ended portion).

Questions. Each conversation was followed by fourteen evaluative questions tapping into perceptions of the aggressor and victim as well as their relationship to each other, the resolution of the argument and verbal and relationally aggressive aspects of the conversation (see Appendix C). These questions were adapted from previous research

that generated possible pragmatic functions and conversational goals associated with sarcasm. Participants responded to these questions on 5- point Likert scales. The questions included:

- 1) A manipulation check for the interpretation of the aggressor's statements as sarcastic or not sarcastic. (Question 8)
- 2) Questions assessing perceived muting the meaning functions of sarcasm in conversation (Questions 1, 2, 5, 9, 11, 12, 14)
- 3) Questions concerning relationally aggressive aspects of what the aggressor said. (Questions 10, 13).
- 4) Questions based on perspective (Questions 3, 4, 6, 7).

Muting the meaning questions were adapted from several papers. Dews, Kaplan and Winner (1995) assessed muting by asking participants to rate perceived humor, criticalness, degree of insult and the overall effect of sarcastic relative to non-sarcastic comments on the relationship of the individuals involved. They found all of these predicted components evidenced a muting effect. That is, sarcastic comments were perceived as more humorous, less critical, less insulting and had a greater positive impact on the relationship of the interlocutors. Additionally, Jorgensen (1996) assessed rudeness and appropriateness, and concluded that a sarcastic comment was both less rude and more appropriate with friends. Matthews et al. (2006) examined the relative roles of humor and politeness, finding support for a muting effect with humor only. Finally, Pexman and Harris (2003) determined that a sarcastic comment was less hurtful as rated by children aged five to eight. These results provided impetus to use the seven muting the meaning questions of the present study.

Self-report Sarcasm measure (SSS). Created and validated by Ivanko, Pexman and Olineck (2004) and used successfully by other researchers (e.g., Dress et al., 2008), the SSS assesses sarcasm usage with a 7-point rating scale and scores are calculated out of a possible 112 points (see Appendix D). Overall, the questionnaire is considered to provide a satisfactory picture of individual differences in sarcasm production. The SSS instructions are as follows: Please rate yourself on the following dimensions. Also: Please ask the experimenter for an example if you would like one.

Relational aggression measure. This questionnaire was previously used by Blasko and Kazmerski (2006) to determine relational aggression in undergraduates. It is a general questionnaire on social interactions with twelve questions assessing relationally aggressive behaviour. Answers are given a seven-point Likert scale and total relational aggression scores will be calculated out of a possible 84 points. A copy of this measure is in Appendix E with asterisks placed next to relevant questions.

The instructions for the relational aggression measure are as follows:

This questionnaire is designed to measure qualities of social interactions and close relationships. Please read each statement and indicate how true each is for you, now and during the last year, using the scale below. Darken the appropriate circle. Remember your answers to these questions are completely anonymous, so please answer as honestly as possible!

Procedure

Participants were given the following general instructions:

For this study you will be asked to read eight conversations. You will notice after each conversation has ended that I have left two lines blank. I am asking you, the

participant, to fill in what you think comes next in the conversation. Please do not spend a lot of time dwelling on what to write. Please read the additional instructions on the first page before you begin.

Participants completed the study individually or in groups of up to ten individuals. Each participant filled out demographic information on the front page of his or her booklet (age, sex and first language) and proceeded with the book of conversations and the two individual differences measures. Although there was not a specified time limit, most participants completed the study within 30 minutes. All participants were arbitrarily assigned a number to ensure that responses could not be associated with a specific individual.

Results

Generalization and Manipulation checks

Recall that there were eight basic scenarios (e.g., the Mp3 topic) used in the present study and for every scenario there was a version that fulfilled the 2 (gender of interlocutors) x 2 (sarcastic or non-sarcastic manipulation) design, resulting in four versions each of the eight scenarios. These eight dialogues were run in a repeated measures ANOVA to ensure that the effects of item could generalize to other stimuli. Given that there are only eight items, the power for finding significant results will not be very high. Where appropriate, significance test of subjects are report as F_S and significance tests of the items are reported as F_I .

Recall that four booklets were created to cover all possible 2 (male/female speakers) x 2 (sarcastic/ non-sarcastic) combinations of the scenarios. These booklets were treated as a between subject variable and an ANOVA was run with the fourteen

evaluative questions as the dependent variable. None of these between subject variables was significant, thus the booklets were not included as a factor in the following analysis.

Recall also participants were asked to provide their definition of sarcasm in a free response format. Following methods similar to those of Dress et al. (2008, p. 80), these definitions were coded on five dimensions: verbal (e.g., sarcasm is something spoken), counterfactual (e.g., saying one thing, intending another), tone of voice (e.g., spoken in a particular tone of voice), aggressive (e.g., sarcasm is designed to be hurtful towards someone) and negative emotion (e.g., sarcasm expresses a negative feeling in general). Participants could have provided more than one attribute of sarcasm. There was remarkable similarity in the definitions provided by male and female participants indicating that the sample shared a general conceptual agreement on what constitutes sarcasm. As can be seen in Table 1, the characteristics of sarcasm most frequently produced are that it is something spoken, it is counterfactual, and although aggressive, it is also humorous.

One of the evaluative questions asked participants how sarcastic the aggressor appeared in conversation. Recall that all evaluative questions ranged from one to five. Aggressors were rated as appearing more sarcastic in the sarcastic condition ($M = 4.52$, $SD = .61$) compared to the non-sarcastic condition ($M = 2.87$, $SD = .89$), $F_3(1,78) = 172.61$, $p < .001$, $F_7(1, 7) = 131.26$, $p < .001$, supporting our contention that the constructed stimuli were suitable instances of sarcastic and non-sarcastic dialogue.

Perception data

The perception results focus on the 14 evaluative questions answered on 5-point Likert scales. These perception data were analyzed in 2 (sarcastic or non-sarcastic)

Table 1. Definitions of Sarcasm: Total Frequency, Total Percentage and Frequency by Gender

Dimension	Frequency(80)	Percent(100)	Males(40)	Females(40)
Humor	41	51.2	19	22
Aggression	26	32.5	11	15
Verbal	69	86.2	33	36
Counterfactual	50	62.5	23	27
Negative Emotion	10	12.5	4	6
Tone	15	18.8	4	11

response by the aggressor) x 2 (gender of the speakers in the dialogue) x 2 (gender of the participant) split plot analyses.

Bonferroni's Correction. Bonferroni's correction was used to control for inflation of type I error rate. This power calculation was determined by dividing a .05 alpha level by the number of statistical analysis performed. The correction was done for each of the three separate groups of questions that were posed in this thesis and described in detail in the methods section. These three groups concerned muting the meaning, verbal aggression and perspective. The calculated alpha level will be reported at the beginning of each section. The alpha level for the muting the meaning set of questions is 0.007.

Muting the meaning data. Consider the set of questions (1, 2, 5, 9, 11, 12, 14) designed to assess the muting the meaning hypothesis that states sarcastic comments are seen more positively than non-sarcastic comments. Intercorrelations among these questions were assessed to determine if each was tapping into a similar muting concept (see Appendix G). These correlations ranged from .09 to .60. The measures of perceived anger, rudeness, verbal aggression, appropriateness and hurtfulness were all highly intercorrelated and may be considered the central aspects that are moderated or muted by the use of sarcasm. Argument resolution was only related to two of these core factors, namely rudeness and aggression. One question, closeness was not related to any of the muting questions. Therefore resolution and closeness are only peripheral to testing the muting hypothesis.

The questions of interest for the current analysis assessed the perceived hurtfulness and the appropriateness of the comment. For means and standard deviations of all muting the meaning questions broken down by sarcastic manipulation see Table 2.

In terms of hurtfulness, non-sarcastic comments ($M = 3.75$) were rated as more hurtful than sarcastic comments ($M = 3.50$), in the subject analysis, $F_S(1,78) = 6.95, p < .01, [F_A(1, 7) = 2.22, p = .18]$. Naturally, the effect is only marginal when subjected to the Bonferroni correction.

Counter to the muting the meaning, in terms of appropriateness, comments were rated as significantly less appropriate when uttered in a sarcastic manner ($M = 1.88, SD = .56$) as opposed to non-sarcastic manner ($M = 2.06, SD = .72$), $F_S(1,78) = 7.85, p < .007, F_A(1, 7) = 6.61, p < .05$.

In summary and in line with some of the predictions, there is one indication that sarcasm maintained some muting effects even in blatantly aggressive dialogue by appearing less hurtful than non-sarcastic comments. However, the results of one question do not support the muting prediction, indicating the sarcasm is seen as more inappropriate than a non-sarcastic comment.

Shared norm data. As Table 3 demonstrates, the results show no differences between male and female participants. However, recall the hypothesis that male and female participants share stereotypes on how each other should act in conversation with males given more latitude in aggressive conversation (for means by gender of interlocutor, see Table 4). In terms of perceived verbally aggressive intention, male aggressors were rated as portraying less verbal aggression ($M = 3.52$) than female aggressors ($M = 3.73$), $F_S(1,78) = 8.34, p < .005, F_A(1, 7) = 3.75, p = .094$.

Participants rated the likelihood that the victim of the comments would be angry with the aggressor when the two friends met again. Results show that the victim was less likely to show residual anger when the friends met again when the aggressor was male

Table 2. Means and Standard Deviations of Questions Concerning the Muting the Meaning Hypothesis

	Sarcastic	Non-Sarcastic
Closeness	3.14 (.68)	3.15 (.78)
Resolution	2.40 (.74)	2.50 (.66)
Appropriateness*	1.88 (.56)	2.06 (.72)
Hurtful*	3.50 (.59)	3.75 (.69)
Anger	4.01 (.60)	3.94 (.70)
Rude	4.14 (.60)	4.06 (.60)
Verbal aggression	3.54 (.67)	3.71 (.64)

* $p < .007$

($M = 3.83$) as opposed to female ($M = 4.12$), $F_S(1, 78) = 16.75, p < .001, F_A(1, 7) = 14.28, p < .001$.

In summary, one question, the likelihood that the victim would be angry at the aggressor, showed only an effect of interlocutor gender, with male victims being less likely to show residual anger. This finding is in line with predictions of shared cultural norms for how men and women should act in conversation in that males were given more latitude in aggressive conversation with each other. Additionally, in terms of resolution, sarcastic manipulation interacted with gender of the interlocutors demonstrating that females were rated more negatively for using sarcasm.

Relational aggression. The alpha level for the verbal aggression set of questions as determined by a Bonferroni correction is .025. Participants answered two questions (10, 13) on how they perceived the relational aspect of the aggressor's comments. These questions were not correlated with each other ($r = .18, n.s.$). Question 13 assessed whether the aggressor was trying to lower the social standing of the victim. Participants indicated that female aggressors ($M = 3.81, SD = .59$) did so significantly more than did male aggressors ($M = 3.60, SD = .71$), $F_S(1, 78) = 5.70, p < .02, F_A(1, 7) = 3.53, p = .10$.

Thus, in summary and in line with predictions of shared cultural norms for how men and women should act in conversation, male interlocutors were also perceived as less relationally aggressive, providing further support to the shared cultural norms hypothesis.

Perspective. The alpha level for the perspective set of questions as determined by a Bonferroni correction is .025. Recall that, across dialogues, participants took the perspective of both the aggressor and the victim when answering comments on perceived

Table 3. Means and Standard Deviations of Questions as a Function of Gender of Participants

	Male Participants	Female Participants
<u>Muting</u>		
Closeness	2.80 (.57)	2.90 (.57)
Resolution	2.45 (.57)	2.43 (.57)
Hurt	3.56 (.47)	3.68 (.59)
Anger	3.95(.55)	3.91(.55)
Verbal Aggression	3.57 (.52)	3.66(.52)
Appropriateness	2.05 (.60)	1.90 (.60)
Rude	4.02 (.55)	4.17 (.52)
<u>Perspective</u>		
Aggressor humor	3.38(.81)	3.37(.81)
Victim humor	1.45(.49)	1.31(.49)
Aggressor polite	2.12(.69)	2.01(.69)
Victim polite	1.42(.49)	1.25(.49)
<u>Relational Aggression</u>		
Social standing	3.60 (.52)	3.81 (.52)
Effective	2.61 (.58)	2.47 (.58)

Table 4. Means and Standard Deviations of Questions as a Function of Gender of Interlocutor

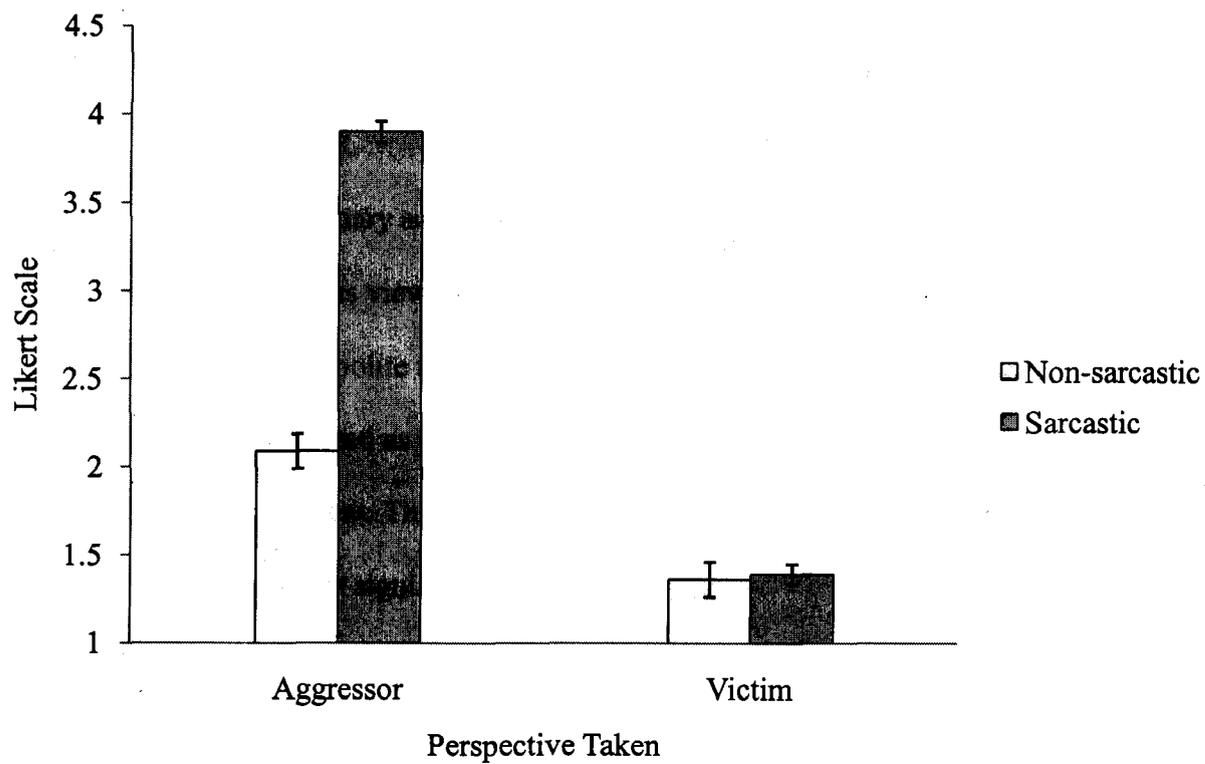
	Male Interlocutors	Female Interlocutors
<u>Muting</u>		
Closeness	2.89 (.65)	2.79 (.71)
Resolution	2.52 (.81)	2.37 (.81)
Hurt	3.56 (.63)	3.68 (.59)
Anger*	3.83 (.67)	4.12 (.67)
Verbal Aggression*	3.52 (.56)	3.73 (.56)
Appropriateness	2.01 (.63)	1.93 (.70)
Rude	4.05 (.53)	4.13 (.66)
<u>Perspective</u>		
Aggressor Humor	3.43 (.89)	3.32 (.89)
Victim Humor	1.39 (.52)	1.37 (.51)
Aggressor Polite	2.10 (.78)	2.02 (.72)
Victim Polite	1.35 (.51)	1.31 (.52)
<u>Relational Aggression</u>		
Social Standing*	3.60 (.70)	3.81 (.59)
Effective	2.58 (.67)	2.50 (.71)

* $p < .007$

humor and politeness in the aggressor's statements (questions 3, 4, 6, 7). These questions were correlated with each other such that politeness perceived by the victim was significantly positively correlated with the victim also finding the comment humorous. Additionally, the aggressor's perceived politeness of the comment was positively related to the victim finding humor in that comment. Finally, if the aggressor perceived the comment as polite the victim was likely to do so as well (see Appendix H). It seems perceived politeness by both the victim and the aggressor and perceived humor on the part of the victim are the only questions related in terms of perspective. In fact, the aggressor's perceived humor was not related to his or her perceived politeness, suggesting that politeness, as postulated by face theory, might not be duly considered by an aggressor.

A separate 2 x 2 x 2 repeated measures GLM was run with interlocutor gender, aggressor comment type, and perspective as the independent variables. A significant main effect was observed for perceived humor, with sarcastic comments ($M = 2.64$ $SD = .44$) rated as significantly more humorous than non-sarcastic comments ($M = 2.12$, $SD = .53$), $F_S(1, 79) = 72.91$, $p < .001$, $F_A(1, 7) = 134.06$, $p < .001$. Additionally, in taking the perspective of the aggressor, participants rated the comment as significantly more humorous ($M = 3.37$, $SD = .80$) than when they took the perspective of the victim ($M = 1.38$, $SD = .44$), $F_S(1, 79) = 349.076$, $p < .001$, $F_I(1, 7) = 401.85$, $p < .001$. Finally, there was a significant interaction of comment type by perspective, wherein aggressors were thought to find their sarcastic comment ($M = 3.90$) significantly more humorous than their literal comment ($M = 2.09$), $F_S(1, 79) = 79.93$, $p < .001$, $F_A(1, 7) = 126.54$, $p < .001$ (see Figure 1).

Figure 1. Interaction of humor as a function of language manipulation and perspective (with standard error bars).



A similar 2 x 2 x 2 analysis was run for the dependent variable of perceived politeness. There was an effect of perspective in which participants taking the perspective of the aggressor perceived all comments as more polite ($M = 2.06$, $SD = .71$) compared to the victim ($M = 1.34$, $SD = .044$), $F_S(1, 79) = 110.836$, $p < .001$, $F_I(1, 7) = 174.02$, $p < .001$. There was no interaction of perspective by comment type, $F_S(1, 79) = .01$, $p = .94$., $F_I(1, 7) = .25$, $p = .63$.

Thus in summary and in line with predictions, perspective is important. The aggressor was rated as viewing their comments (sarcastic and non-sarcastic) as both more humorous and more polite than the victim of those comments. Moreover, aggressive interlocutors were rated as perceiving more humor in his or her sarcastic as opposed to non-sarcastic comment. The equivalent interaction concerning politeness by language manipulation was not significant.

Production data

The production results focus on the two lines at the end of the dialogue (one for the aggressor and one for the victim) that were left blank so participants could complete what they thought came next. Two raters coded these lines as either sarcastic or non-sarcastic. The interrater agreement between the two raters was assessed. For the victim's line of dialogue, rater one (Andrea Bowes) and a second rater had 98% overlap. For the aggressor line of dialogue, the raters had 90% overlap in agreement on coding. These percentages of overlap were considered satisfactory interrater agreement. Only the data from the first rater was employed in the following analysis.

Participants filled in non-sarcastic comments in the victim line 98 % of the time, thus ensuring that the participants were on task. Due to low variability in the victim's line

of dialogue, it will not be included in the following analysis. There were 638 aggressor line completions, with two lines omitted because participants failed to provide a continuation of the dialogue. Overall, there were more non-sarcastic ($n = 416$) than sarcastic comments ($n = 222$) completed in the aggressor line, $\chi^2(1) = 58.98, p < .001$.

A chi-square goodness of fit test was performed on language type written in the aggressor line. The congruent language type (sarcasm produced in sarcastic condition, non-sarcastic produced in a non-sarcastic condition) was compared to the incongruent language type (e.g., sarcastic produced in non-sarcastic condition, non-sarcastic produced in a sarcastic condition). The relationship between these variables was significant $\chi^2(3) = 74.72, p < .001$. As demonstrated in Table 5, participants produced significantly more congruent responses than incongruent responses, thus demonstrating that participants noticed that the aggressor was speaking sarcastically or non-sarcastically and adopted the congruent manner of speaking when completing what came next in dialogue.

Gender differences in production data. A chi square test was performed with to examine amount of sarcasm use by each gender. Males ($n = 100$) and females ($n = 122$) did not differ in the overall amount of sarcasm completed in the aggressor line, $\chi^2(1) = 2.11, p = .14$. Additionally, there were no significant differences between the amount of sarcasm that was inserted in the aggressor's line when that aggressor was female ($n = 107$) compared to when the aggressor was male ($n = 115$), $\chi^2(1) = .288, p = .59$.

Individual Differences Measures

Sarcasm Self-Report. Participants completed a sarcasm self-report scale whose scores were subsequently divided into the constituent subscales (as determined by Ivanko et al., 2004). Cronbach's alpha was calculated to assess the internal consistency of all

Table 5. Chi Square Goodness of Fit: Participants' Response in Congruent and Incongruent Conditions

		Language Manipulation	
		Sarcastic	Non-Sarcastic
Participant Response	Sarcastic	163	59
	Non-sarcastic	156	260

scales and subscales and will be reported where appropriate. Following the criterion of George and Mallery (2001), an acceptable alpha value in the present analysis will be a minimum of 0.7. The general sarcasm use subscale measures, overall, how sarcastic the participants believe they are. The Cronbach alpha for the general subscale (.84) was acceptable. The subscale is comprised of six questions which include, for instance, "How sarcastic are you?" Males ($M = 31.08$, $SD = 5.32$) reported significantly more use than females on this general subscale ($M = 27.82$, $SD = 8.27$), $t(78) = 2.09$, $p < .05$.

Scores aggregated on the face-saving subscale assess the situation in which using sarcasm is the riskiest. That is, this subscale assesses sarcasm use with strangers (e.g., "what is the likelihood you would use sarcasm with someone you just met?"). The Cronbach alpha for the face-saving subscale was .65. According to George and Mallery (2001), this alpha level is questionable. Therefore any inferences made using the results of this scale should be interpreted cautiously. Males ($M = 10.7$, $SD = 3.99$) reported marginally significantly more use than females ($M = 8.85$, $SD = 4.33$), $t(78) = 1.98$, $p = .051$. These findings are in line with Ivanko et al.'s (2004) original work on the sarcasm self-report scale.

Scores aggregated on the embarrassment diffusion scale assess when a participant would use sarcasm to minimize an accomplishment. The Cronbach alpha for the embarrassment diffusion subscale (.74) was acceptable. Males ($M = 9.03$, $SD = 4.62$) and females ($M = 7.47$, $SD = 4.74$) did not differ significantly, $t(78) = 1.49$, $p = .143$.

Finally, scores aggregated on the frustration diffusion subscale measure the tendency on the part of the participant to use sarcasm in frustrating or otherwise annoying situations to diffuse the negativity brought about by these situations. The Cronbach alpha

for the frustration diffusion subscale was .67. According to George and Mallery (2001), this alpha level is questionable. Therefore any inferences made using the results of this scale should be interpreted cautiously. Males ($M = 13.62$, $SD = 4.47$) and females ($M = 13.60$, $SD = 5.19$) did not differ significantly in their self-report use, $t(78) = .02$, $p = .982$.

One question, germane to the present study, asked the likelihood of using sarcasm to insult someone. The male and female difference approached significance, with males ($M = 5.70$, $SD = 1.33$) indicating greater likelihood to use the linguistic device to insult than do females ($M = 5.07$, $SD = 1.78$), $t(78) = 1.91$, $p = .059$.

Collapsing across all of the subscales yielded one overall SSS score for the participants. The difference between male and female participants on this aggregate score approached significance, with males ($M = 68.21$, $SD = 13.5$) reporting greater use of the linguistic device than females ($M = 61.6$, $SD = 18.43$), $t(78) = 1.83$, $p = .072$.

Thus, overall, the pattern of results indicates that males tend to report greater general use of sarcasm than do females. Taken with the production findings, these results support the trend in previous research that suggests although males tend to self-report greater use of sarcasm, they do not actually use more on a controlled production task.

In order to see if sarcasm self-report is related to use, a correlational analysis was performed between the amount of sarcasm used in the aggressor line and the various subscales on the SSS. The overall amount of sarcasm used in the aggressor line did not correlate with any of the subscales (see Table 6).

A correlational analysis was also performed with the evaluative questions. Only one of the questions revealed a potential relationship. The 'likelihood of resolution' scores were collapsed across all conditions. A correlation approaching significance was

found between these scores and the amount of sarcasm used overall in the aggressor line, $r(78) = -.20, p = .074$. Additionally, a significant negative correlation was found between the likelihood of resolution score and the amount of sarcasm use in the sarcastic condition, $r(78) = -.29, p < .01$. As the use of sarcasm in the aggressor line overall (and in the sarcastic condition only) increased, the likelihood of conflict resolution decreased.

Relational aggression. Recall that participants completed a 12 item relational aggression measure. Items were answered on a Likert scale that ranges from 1-7, with a maximum possible score of 84. The Cronbach alpha for the relation aggression scale (.79) was acceptable. No differences were found between males' ($M = 29.60, SD = 9.43$) and females' self-report relational aggression ($M = 27.62, SD = 9.25$), $t(78) = .95, p = .35$.

The relational aggression self report scores were correlated with the evaluative questions. None of the correlations were reliable (see Appendix F). These data show no support for the postulate that individual variation in relational aggression moderates how people interpret or understand a comment made in a social conflict (as suggested by Blasko & Kazmerski, 2006).

Table 6: Pearson Correlations Between Participants' Use of Sarcasm in the Aggressor's Line of Conversation and the Sarcasm Self-report Scales.

	Scale				
	General	Face-save	Embarrassment	Frustration	Overall
<i>r</i>	-.02	-.08	-.05	.13	-.002

Discussion

One purpose of this thesis was to investigate the pragmatic, muting effects of sarcasm in experimentally controlled dialogue between two friends. Dialogues were constructed to be more representative of the context in which sarcasm is used, emphasizing its psychological distinction from irony (Lee & Katz, 1998). In a more general way, a second goal of the present study attempted to answer the following research questions: will perception of an aggressor's intent differ or be muted as a function of a) gender of interlocutors b) type of aggressor comment (sarcastic/non-sarcastic) and c) perspective? The research included the gender of the interlocutors in the conversation as a variable to investigate whether males and females demonstrated culturally shared notions of gender roles and subsequently agree on how each other should speak in aggressive or sarcastic conversation. A third goal assessed the production of sarcastic comments. Finally, to explore the individual differences in sarcasm a relational aggression and a sarcasm self-report scale were also used.

Muting the meaning

Dews and Winner's (1995) initial research found that an ironic comment acted as a buffer against its negative connotations. When these researchers changed a comment from the direct "what a lousy worker you are" to a sarcastic "what a good worker you are", participants rated the latter as less critical. The present study was concerned that their stimuli along with subsequent iterations of their findings (e.g., Pexman & Harris, 2003; Pexman & Olineck, 2002), did not adequately represent the negativity associated with the psychological construct of sarcasm. That is, unlike irony, sarcasm has a specific victim and is borne of dialogue. Furthermore, it is chosen in conversation because of its

verbal aggression (Lee & Katz, 1998). Importantly, though Dews and Winner's stimuli might not be representative of a sarcastic situation, their work has been used to characterize the role of sarcasm in conversation in subsequent research (e.g., Pexman & Harris, 2003). Recall also that other research (e.g., Colston, 1997) presents contradictory findings by suggesting that sarcasm, in some instances, can be perceived as more hurtful than non-sarcastic comments. The present research constructed more elaborate and direct conflict between two friends to assess the muting the meaning hypothesis in blatantly aggressive situations.

Consider the intercorrelations between muting questions in the present study. Although, six of the seven muting questions taken from previous research were related, only five were highly intercorrelated (see Appendix G). Therefore perceived anger, rudeness, verbal aggression, appropriateness and hurtfulness were considered central to the muting hypothesis. Interestingly, closeness was not correlated with any of the others. Although closeness has been implicated in previous research (e.g., Jorgensen, 1996) it is possible that the framing of the question in the present study led to the findings reported here. The question asked how close the two friends were before this fight and in this way required participants to make an inference about the relationship with little information to guide them. Although it is possible for the participants to examine the type of language used by the two friends as a means of determining relationship status, it is apparent that participants did not do so. A better way to pose this question, and a lesson for future research, would involve asking participants to determine, based on the previous exchange, how close the friends were.

The present results show non-sarcastic comments were rated as marginally less hurtful than sarcastic comments. This finding is consistent with a 'muting' of the negativity of a sarcastic comment and suggest that sarcasm can demonstrate some muting the meaning effects even in blatantly aggressive situations. Why should sarcasm work to mute the meaning even in blatantly aggressive situations? According to Dews and Winner (1995), it is because of the positive tinge invited by the evaluative tone. There are also additional possibilities, for instance sarcasm prompts a lack of commitment to what one is saying (Clift, 1999) and a sarcastic comment provides more than one interpretation, thus making the criticism it conveys ambiguous (Eisterhold et al., 2006). That criticism is diluted in this way might be due to the indirectness of sarcasm (see Slugoski & Turnbull, 1988). Results of my thesis suggest that although meaning may have been muted, the criticism is still salient and severely attenuated these effects.

Results of my research showed that only one of the seven muting questions demonstrated a muting effect and this effect was marginal. Additionally, in the present study, when participants were asked about the perceived rudeness of the aggressor, no differences were found between the sarcastic or non-sarcastic language manipulations. Moreover, sarcasm was not perceived as prompting greater resolution or assuaging the victim's anger as demonstrate in Dews and colleagues' (e.g., Dews et al., 1995) original work on the topic. Therefore, although the results of the current research show muting effects, these effects are tempered by the type of questions researchers ask. That is, not all of the muting effects of previous research (Dews et al.) can be demonstrated with blatantly aggressive dialogue.

It might seem contradictory to the muting hypothesis that sarcasm was perceived as less appropriate than the non-sarcastic aggressive condition. One can only speculate why this occurred. One possibility comes from research that acknowledges the contradictory nature of sarcasm. That is, researchers have indicated it is not contradictory to consider sarcasm as both relevant and inappropriate in a conversational context. Haiman (1998) calls a sarcastic message “emotionally inappropriate” (p. 33) as there is a salient incongruity between the emotionally-positive literal message and the negatively intended non-literal message. Furthermore, in a sense, sarcasm is always inappropriate because it trumps the implicit conversational principle that one should conduct discourse in reality and not communicate under false pretenses (Attardo, 2001b). That is, when one is being sarcastic, he or she is pretending to feel something they do not actually feel, to affect the listener. To elaborate on why we continue to use sarcasm in conversation despite its flouting of conversational rules, Attardo explains that the “inappropriate utterance must be nonetheless relevant [to] provide an inferential path towards reconstructing the speaker’s intention” (p.163). The aggressor’s sarcastic statements in the present study were literally or contextually false and therefore inappropriate in conversation. Yet, these statements could be reinterpreted to have non-literal validity thereby helping the reader understand why the aggressor is speaking this way (e.g., criticism). Attardo concludes that the most inappropriate message in a speech act can be most important or informative because the speaker is acting in such a way for calculated reasons.

Perspective

Dews and Winners (1995; Dews et al., 1996) also implicated politeness and humor in the pragmatic functions of a sarcastic comment. Their claim was that, in general, an implicit rule of conversation dictates that a speaker should err on the side of politeness. This rule creates an expectation that those who speak to us, will speak positively; doing otherwise poses a social threat (e.g., lose of face). Speaking indirectly, as in the case of sarcasm attenuates this threat through a positive tinge. Conversely, being directly impolite poses more a threat to conversation and to 'face'.

Humor associated with sarcasm is explained through the incongruity between what is said and what is meant. Many jokes work through a similar juxtaposition of incongruous elements. For instance, punch-lines of jokes are humorous because they are incongruous to the joke's build-up (Attardo, 2001a). Dews et al. (1996) speculated that this incongruity surprises the listener, making the comment more humorous and weakens any negative impact.

Subsequent work by other researchers suggests that one might be best to consider politeness and humor based on the victim's and the aggressor's perspective (Leggitt & Gibb, 2000; Toplak & Katz, 2000). The results of the present study demonstrate that taking the perspective of the aggressor prompted greater ratings of humor in a sarcastic as opposed to non-sarcastic comment. Additionally, the aggressor was perceived as finding more humor in his or her comments overall as compared to the victim of the same comments. Politeness showed a main effect of perspective, where the aggressor was rated as perceiving all of his or her comments (sarcastic and non-sarcastic) as more polite than the victim. However, politeness failed to show an interaction by comment type. The

aggressor saw his or her sarcastic comment as no more polite than a non-sarcastic comment. The present results suggest that politeness does not hinge on indirectness, as Dews et al. (1996) would predict, but rather on the perspective taken. In aggressive conversation, aggressors might not want to admit to themselves that they are being impolite, but such transgressions will be readily perceived by a victim.

Humor is an interesting construct because it seems to hold a contradictory role in communication: that the same comment was perceived as both hurtful and humorous in previous research (e.g. Toplak & Katz, 2000) speaks to this contradiction. Additionally, although Jorgensen (1996) demonstrated some face saving effects, she noted the humor did not play a role. Research suggests that joking is non-cooperative in the sense that the individual attempting humor is flouting Gricean guidelines that dictate how to be cooperative in conversation (Attardo, 2001b). For instance, at times joking can involve lying for the purposes of amusement. Though it breaks some of the implicit rules of conversation, humor is a socially acceptable form of communication (Attardo).

That perceived humor, but not politeness emerged from the analysis mirrors Matthews et al.'s (2006) findings of a discrepancy between these two variables. These authors indicated that humor, but not politeness was a significant predictor for participants' decision to use sarcasm. Attardo (2001a) provided an interesting explanation for why humor might work in these contexts. He gave an example of aggressive sarcasm. In response to a student orally providing an incorrect answer to a question in a classroom setting, the professor states "that was brilliant". The author conjectured that although the comment can be, in itself, humorous, the victim is unlikely to appreciate the comedy. The author distinguished humor as something to be comprehended from humor as

something performed. Humor performance, as in the present study, involves two interlocutors as well as some recognition of intentions on the part of the victim. Although a victim might comprehend that his or her aggressor is attempting humor in a situationally removed sense, that victim will not ultimately appreciate this performance. It appears that the participants in the present study were willing to accept that the comment was humorous, through the aggressor's perspective ratings, yet were also willing to acknowledge that the victim might not agree. Participants thus conformed to Attardo's performance/comprehension distinction in humorous exchanges.

Other research has assessed perspective taking. Toplak and Katz (2000) modified oft-cited stimuli of Kreuz and Glucksberg (1989) so that participants could take the perspective of the aggressor or victim or uninvolved third party. Consider one of Toplak and Katz's scenarios through the eyes of the aggressor:

Harry: Don't worry, I can move this grandfather's clock by myself

You: Are you sure, I don't want things to get ruined. I know it's awkward to move, do you think you can manage?

Harry: Of course, this clock is nothing compared to the weights I lift at the gym.

You: O.K. Go ahead, don't let anything happen to that clock!

You continue moving boxes into the other room. Harry only manages to tip the clock over and it crashes to the floor. You return to the room, signalled by the noise, and say "You're really helping me out."

The conversational goals of sarcasm as perceived by participants taking the perspective of the aggressor included humor, mocking and verbal aggression. Participants in this condition also rated the comment as less polite than a non-sarcastic comment. A

similar pattern of results appeared when participants took the perspective of the victim. Through this perspective, the sarcastic comment was rated as humorous, mocking and less polite than non-sarcastic comments.

Toplak and Katz's (2000) pattern of results is discrepant with those of the present study. For instance, current results show that the victim was rated as finding the comment lacking mirth. Additionally, Toplak and Katz found that, through the perspective of the aggressor, participants insisted that the comment was designed to be both verbally aggressive and mocking. This contradicts the present results, which shows less verbal aggression overall with sarcastic as opposed to non-sarcastic statements (but note the current research did not ask the participants to take a certain perspective when assessing verbal aggression). In fact, the only finding of Toplak and Katz that is in line with the present results was that the aggressor was thought to seem more pleased with him or herself. Toplak and Katz concluded that perspective taken trumps muting the meaning effects and, in agreement with Colston (1997), a sarcastic comment can enhance the perceived negativity.

To explain this discrepancy, consider the methods used by Toplak and Katz (2000). It is possible that their between subject-design led to their specific pattern of results. That is, the participants took the perspective of a victim or aggressor or uninvolved third party. In contrast, the present study's repeated measure design required participants to hold two perspectives in mind, leading to the effects shown here. Although the present study provided an interesting asymmetry in the comment's valence between aggressor and victim, Toplak and Katz's methods might be more ecologically valid. It is likely that while conversing, an interlocutor would not hold both perspectives in mind to

the extent required in our study. To further investigate the role of perspective, the stimuli from this study should be run in a between subject manner, with one sample answering questions solely from the perspective of a victim and one through the perspective of the aggressor.

More generally, without considering perspective, Colston (1997) has indicated that sarcasm is more derisive than non-sarcastic, direct statements. To explain the discrepancy between his research and the present thesis, we must consider the research questions being asked by Colston. He speculated that if the victim was guilty of the act of which the aggressor was accusing him or her, the sarcastic criticism could have enhanced condemnation. In this way, the results of Colston's study are not directly comparable to the present results, which did not emphasize relative guilt.

It is possible to conclude that, in explicitly negative situations, as in the present study, sarcasm might have served as the lesser of two evils, allowing one to effectively insult while muting the negative meaning. Though Colston (1997) has suggested sarcasm does just the opposite, he has subsequently admitted this speech act might be a better method of anger expression compared to bullying or slander (Gibbs & Colston, 2001). For instance, sarcasm is perceived as a better mode than direct aggression in the workplace (Allcorn, 1994). The present research gives support to these speculations.

Gender differences

Research on gender differences in language suggest that males and females have different conversation goals as conceptualized by the gender-as-culture hypothesis. This hypothesis states that males and females learn culturally appropriate ways to speak, as well as the consequences for following or breaking the rules (Maltz & Borker, 1982). As

a result of these internalized, culturally guided maxims, males tend to be direct and competitive in their speech, whereas females spend more time hedging (Mulac et al., 2001) and conversing in a supportive, relational and polite manner (Colley & Todd, 2002; Jorgensen, 1996). Furthermore males are more likely to tease and insult (Lampert & Ervin-Tripp, 2006; Thomson & Murachver, 2001), whereas women are more likely to avoid such face-threatening situations. Drawing heavily from Mulac and colleagues, Colley and Todd (2002) place sarcasm among rhetorical questions, self-promotion and strong assertions, label this as male speech and suggest that a gendered division of language may affect perceptions of speech acts like sarcasm.

In her oft-cited work, Jorgensen (1996) initially proposed that women might enjoy sarcasm more than men because, traditionally, females have been viewed as indirect thereby avoiding speech that directly threatens 'face' (Coates, 1993). This initial postulate was trumped when she put it to the test. In her work, male participants were more likely than females to find sarcasm to be a positive gesture and were more likely to find humor in a sarcastic comment.

Subsequent research supported this finding by emphasizing the fact that, though indirect, sarcasm is a 'male' trait. For instance, the aggressive nature of sarcasm led Colston (2003) and Gibbs (2000) to speculate that males, the more overtly aggressive sex, might use it more. Additionally, sarcasm is theorized to have more social rewards for males, providing, for instance, a forum for playful one-upmanship (Lampert & Ervin-Tripp & 2006). That males also use more humor in daily conversation (Solomon, 1996) is in line with these postulates.

Consistent with sarcasm as a male form of speech, Colston and Lee (2004) found that, when participants were given an utterance without a name indicating the gender of the speaker, both male and female participants saw sarcastic comments as originating from a male as opposed to female speaker. Interestingly, in a pilot study reported by Colston and Lee (2004), participants were asked to rate the degree of sarcasm when given stimuli with gender markers (e.g., strongly male or female names). No differences between males and female interlocutors were found based on participants' ratings of how sarcastic these speakers appeared. This finding suggests that participants can be perfectly comfortable with both genders using sarcasm, but when gender markers are removed, participants are more likely to attribute sarcasm to males.

Counter to the hypothesis that males perceive sarcasm as a more affirmative experience than females, the present study found no gender differences in the participants' perception of sarcastic comments. However, the present study, inspired by the parallel constraint approach to sarcasm processing, included an often ignored constraint of past research: gender of the interlocutors in the conversations. Previous research has demonstrated that participants were uncomfortable accepting females behaving in a stereotypically male manner and rated these traits as less desirable (Prentice & Carranza, 2004). Based on the idea that males and females share culturally agreed upon notions of how they should act in conversation, the present study demonstrated that all participants seemed to give male dyads more latitude in aggressive conversation. That is, males were rated as less verbally aggressive and less likely to be angry with each other when they met again. Female aggressors, conversely, were rated as

more likely to be attempting to lower the social standing of the victim, suggesting a bias on the part of participants to see females as more relationally aggressive than males.

Taken together, these results suggest that though male and female participants were using sarcasm equally and self-reporting relational aggression equally, there exists an interesting discrepancy in perception, where men are given more latitude to fight. This finding parallels that of Coates (1993) where she suggested that "loud, aggressive argument is a common feature of speech in all-male groups" (p. 191). From the present research, it appears that both male and female participants can agree on this characterization. Furthermore, this verbal sparring is a rewarding endeavour for men but not women (Tannen, 1998). Women dislike such display because they are more likely to perceive them as personal attacks (Coates, 1993). Moreover, sarcasm on the part of females only compounds the negativity of aggression, making it less likely for females to resolve their argument in the long term.

Individual Difference in Self-report Sarcasm Use

Recall that Ivanko et al. (2004) developed and validated the sarcasm self-report scale to provide both a good estimate of the amount of sarcasm used by an individual and why he or she uses it. In the present study, scores on the general subscale of this measure show that the male participants in the present study reported significantly more use of sarcasm in day-to-day communication. Ivanko et al. found a similar pattern of results using the same sarcasm self-report scale and a production task with less blatantly aggressive short context-building stories.

The present results also show that male participants reported significantly more use of sarcasm for its face-saving effects. This subscale assessed, for instance, whether

one would use sarcasm at its riskiest: with a stranger. It should be noted that the internal consistency of this scale, as determined with Cronbach's alpha, was questionable. Therefore, I can only tentatively conclude that males might use sarcasm in risky situations.

The question asking the likelihood of using sarcasm as a form of insult showed a marginal effect with males more likely than females to indicate that they would use sarcasm to insult. Again, although this finding is interesting, it is questionable to use one item from a large individual difference measure as the reliability of this item might be suspect. Therefore any inferences made with this item and the face-saving scale must be considered with caution. Nonetheless, given the aggressive context, males' greater willingness to use sarcasm at its riskiest and to insult, one might also expect that we should see more sarcastic completions on the part of the male sample compared to the females. Consider now, the production findings.

Production

Recall sarcasm production is often assessed through the use of pre-recorded or transcript data (Eisterhold et al., 2006; Gibbs, 2000). Dress et al. (2008, p. 82) have indicated that eliciting "spontaneous sarcasm in a laboratory setting" might provide a better measure of actual use. The production results of the present study are interesting because they suggest participants are willing adopt the manner of speaking of the victim and aggressor, be it sarcastic or non-sarcastic. It is logical that overall, participants produced more non-sarcastic than sarcastic completions given that it is the default manner of speaking in day-to-day conversation. It should be noted however, that the differences between the congruent and incongruent conditions as determined by the

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goodness of fit test may have been driven by the participants' non-sarcastic as opposed to sarcastic production. Although participants adopted the mode of speaking that was congruent to the condition, more work should be done to find the conditions that will optimally elicit sarcastic and non-sarcastic remarks by the participants.

There is an issue in asking participants to read the dialogues as an omniscient third party. It is possible that, since participants are not explicitly responding in their own voice, but the voice of a character, generalizations I may make about the production data are limited. For instance, that the participants responded in a congruent manner in sarcastic and non-sarcastic conditions might suggest that they were simply on task or able to pick up basic patterns in conversation. It could be argued that this behaviour does not permit generalizations to the participant's actual use of sarcastic and non-sarcastic language outside of this study. Nonetheless, demonstrating that sarcasm can be perceived and subsequently used in conversation should not be minimized as this basic finding can provide an empirical basis for priming studies in the future. Future production and priming studies can generate models on the production of sarcasm as opposed to just the perception of this linguistic device.

Recall the current study was also interested in males' and females' use of sarcasm. Gender differences in production of non-literal language and sarcasm are based on the idea that males are more willing to risk miscommunication in conversation (e.g., Hussey & Katz, 2006). This riskiness has its benefits such as facilitating bonding or by adding humor. Hussey and Katz provided support for this hypothesis by demonstrating that male, but not female, participants were willing to risk being misunderstood by using novel, unconventional metaphor with unfamiliar interlocutors.

There appears to be an emerging trend in the research where males tend to indicate that they use more sarcasm (in a self-report scale) but do not actually use more in a production task (e.g., Ivanko et al., 2004). This distinction is germane to the present study. Although males indicated that they use more sarcasm in general, to insult as well as for its face-saving effects, the present study found no differences between males and females in their actual use. The null findings are especially interesting because participants were prompted to use sarcasm to insult. Though males reported a greater likelihood to use sarcasm to insult than females, both used sarcasm equally to deride the victim in the dialogue.

Additionally, we considered the amount of sarcasm used in the male-male and female-female interlocutor conditions. Participants saw sarcasm as something spoken in equivalent amounts between male friends and female friends. To date, no research has examined this aspect of sarcasm in a controlled experimental task. However, Gibbs (2000) has suggested that sarcasm is spoken equally to males and to females when he analyzed transcript data.

Dress et al. (2008) explained differences in actual sarcasm use as based on the self-report scores that crosscut gender differences. They found a weak positive significant correlation ($r = .28, p < .001$) between free response and self-report data. These researchers concluded that participants possessed some degree of metapragmatic awareness. The present study, using the same measures as Dress et al. (e.g., SSS scale) failed to find a correlation between self-report and actual use. It is not clear from the Dress et al. paper if the SSS was divided into its four constituent subscales. In the present study, none of these subscales (face-saving, embarrassment diffusion, general and

frustration diffusion) correlated with the amount of sarcasm used in the aggressor's last line. Additionally, one overall score taken from the SSS did not correlate with the amount of sarcasm used in the aggressor line. Although their correlation was significant, Dress et al. (2008) indicated that this tendency was not strong. Given that the participants in the present study completed their self-report immediately after the perception and production task, one might have expected to find, as Dress et al. did, that high SSS participants might have some awareness of how much sarcasm they actually used. The results suggest that this is not the case.

That self-report did not correlate with actual use of sarcasm suggests that participants had low degree of metapragmatic awareness. Interestingly, research has indicated that sarcasm is more difficult to comprehend than other devices that exist on a non-literal language continuum (e.g., indirect requests, statements that flout Grice's maxim of relation and statements that flout Grice's maxim of quantity; Champagne, Virbel, Nespoulous & Joannette, 2003). Perhaps the relative complexity of a sarcastic comment makes speakers less aware of their use, compared to more direct forms of speech. Conversely, it is possible that some sarcastic responses are so lexicalised (e.g., yea right) that they are rarely spoken sincerely and thus elude detection by participants.

An alternate explanation is, though participants are aware of the sarcasm they use, they are unwilling to admit using sarcasm in aggressive situations. Dress et al.'s (2008) stimuli were not as aggressive as the current stimuli, possibly promoting more accurate self-report. Additionally, there is a subtle distinction to be made between their methods and those of the present study. Dress et al. instructed participants to "imagine they were watching the interaction take place and write the completion that best fits the situation"

(p. 74). In contrast, in the present study participants were required to fill in what they thought came next in the conversation, thus providing results that may not have been in the participants' own character, but the character of the interlocutors.

A final explanation considers the methods of the present study. It is possible that completing two short lines of dialogue is too constrained to show real gender differences in the production of sarcasm. Moreover, although well controlled, the written dialogue form used here is not equivalent to actual conversation. Methods such as computer mediated chat (CMC) have elaborated on the use of sarcasm in conversation (Hancock, 2004) and would be a next logical step to further investigate constraints like gender and context.

We did find one interesting significant, albeit marginal, negative correlation. Overall, as the use of sarcasm increased, the likelihood of resolving the argument decreased. It seems that the relative likelihood of the friends resolving their fight might prompt sarcasm use and therefore would be a factor to consider in future research. Moreover, sarcasm production on the part of the participants might be more complex than was initially thought. That is, measuring use of sarcasm might not be as straight-forward as looking for a positive correlation between self-report and actual production in a controlled study. It is possible that participants considered other dimensions of the dialogue or vignette when formulating what to produce. This correlation also suggests that participants might have thought that sarcasm could help resolve the conflict.

Sarcasm production in the victim's line

Recall that only two percent of the completions in the victim's line of conversation were sarcastic. We took this to suggest that the participants were on task.

However, research suggests there are a number of reactions that one can have to a sarcastic/ironical comment (Attardo, 2001a). These range from serious reactions or ignoring the tease to laughter, accepting the facetious nature and playing along. Kotthoff (2003), on examining the language in formal debates (e.g., the serious side of conversation), found only one instance where an individual would mode adopt and play along with an ironical comment by responding in kind. This finding was contrasted with the data obtained from an informal dinner setting with friends, where mode adopting was found 50% of the time. Note importantly Kotthoff's work relies on observational data. Nevertheless, her data suggest that, in serious contexts, the victim is less likely to mode-adopt the aggressor's tone.

That participants thought the victim would not respond sarcastically to a sarcastic attack suggests that this might be another way sarcasm differs from irony. In ironical exchanges interlocutors might converge and respond in kind, sarcasm may override this tendency. Further investigation as to when sarcasm is primed is required.

Definitions

Dress et al. (2008) examined differences in definitions of sarcasm to explain their findings of relative differences in use between a northern and southern sample of U.S. participants. In their sample, northern participants admitted to significantly more use of sarcasm than southern participants and, when asked to define this type of non-literal language, were more likely to find it humorous. In the present study, no difference in the definition of sarcasm was found between males and females, with both samples defining the construct similarly. Additionally, those who defined sarcasm as humorous did not use

it more in the production task. Although this factor provided a compelling explanation for Dress et al.'s findings, no such explanation is suited here.

The Relational Aggression Measure

Recent research has suggested individuals differing in usage of relationally aggressive tactics (e.g., those likely to gossip or manipulate social relationships) may view the same sarcastic comment differently (Blasko & Kazmerski, 2006). The authors reported that a low relationally aggressive group may have been more sensitive to the sarcastic quip as they showed slower reading times at the end of a sarcastic, as opposed to literal, sentence. In their research, a high relationally aggressive group demonstrated a greater ease of processing the negative quip, suggesting some experience in dealing with sarcasm as it relates to aggression. In the present study the relational aggression measure did not correlate with any of the subscales on the sarcasm self-report scale, nor with the amount of sarcasm used in the aggressor's line of conversation, thus failing to support Blasko and Kazmerski's findings. There were no reliable correlations between the evaluative questions and the relational aggression measure. It is possible that Blasko and Kazmerski's measure (e.g., ERP) was more sensitive to the influence of relational aggression on the processing of sarcastic and non-sarcastic statements. Perhaps using a measure of online reading time with the dialogue of the present study might elucidate the the role of relational aggression.

Future research

Research (e.g., Slugoski and Turnbull, 1988) has shown that muting effects might only hold in the context of close, friendly relationships and dissolve among strangers. Given that the present stimuli only detailed conversations between friends, the results

cannot speak to other contexts like strangers, mixed gender dyads or conversations that involve a power differential between interlocutors. These variables, inspired by a parallel constraint satisfaction approach, remain an avenue for future research in the context of sarcastic conversation.

Additionally, Colston (2002) provides a critique of empirical finding relevant here. He calls upon the notion of contrast effects, to explain muting the meaning findings. He explains that the stimuli in these studies are consider in relation to one another and any muting findings associated with sarcastic comments might only appear relative to the non-sarcastic ones. These contrast effects should be considered in future research.

It could be argued that requiring participants to read the dialogues as an omniscient third party does not permit an accurate assessment of the participants' perceptions and thus limits the generalizations I can make about these perceptions. This method was inspired by and is thus consistent with a body of work done with reading tasks in sarcasm and, more broadly, non-literal language (e.g., Colston, 2003; Dews & Winner, 1995; Katz, 2005; Leggitt & Gibbs, 2000; Matthews et al., 2006; Pexman & Olineck, 2002). Research on reading tasks suggests that providing instructions that prompt an individual to take perspective instead of simply asking that individual to read the story permits identification with the characters (Albrecht et al., 1995). In asking the participants to remind themselves what certain individuals had said in conversation and by providing a number of perspective questions, the present study likely prompted this identification. However, the degree to which the participants' responses were reflective of their own behaviour was not assessed. Future research should consider the possibility

that the perceptions of the participants might not represent what they would perceive outside of the experimental setting.

Conclusions

Given the nature of sarcasm as an inherently contradictory psychological construct, researchers have difficulty controlling the valence of relative critical and complimentary sarcastic statements across different experimental pursuits. Although this thesis reports stimuli that are thought to be more aptly sarcastic, research is still a long way off from a synthesis of all the disparate findings. Nonetheless, the present research sheds light on sarcasm, gender and aggressive conversation with a concerned eye for stimuli and questions asked.

Inspired by the parallel constraint-satisfaction model of sarcasm processing, the present study considered an often ignored constraint: gender of the interlocutors in conversation. Results show that participants give males more latitude in aggressive conversation while punishing females for the same remarks.

In conclusion, by using a number of sarcastic non-sarcastic statements in dialogue form instead of just one of these statements placed at the end of a short paragraph, this thesis has shown meaning can be muted even in blatantly aggressive conversation. Moreover, the results suggest that though being sarcastic might save face in aggressive conversation, simply being male might also suffice. Additionally, when participants were asked to provide continuations for the dialogue, they accurately adopted the mode of speaking of the victim and aggressor. This is a unique finding given the dearth of production studies in sarcasm. Finally, against some popular opinion, there were no

gender differences in production of sarcastic statements, suggesting both male and females are equal to the task.

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Appendix A: University of Western Ontario Ethical Approval Form



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Use of Human Subjects - Ethics Approval Notice

Review Number	09 01 03	Approval Date	09 01 14
Principal Investigator	Albert Katz/Andrea Bowes	End Date	09 06 30
Protocol Title	How do friends communicate when they fight?		
Sponsor	n/a		

This is to notify you that The University of Western Ontario Department of Psychology Research Ethics Board (PREB) has granted expedited ethics approval to the above named research study on the date noted above.

The PREB is a sub-REB of The University of Western Ontario's Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario. (See Office of Research Ethics web site: <http://www.uwo.ca/research/ethics/>)

This approval shall remain valid until end date noted above assuming timely and acceptable responses to the University's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the PREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of research assistant, telephone number etc). Subjects must receive a copy of the information/consent documentation.

Investigators must promptly also report to the PREB:

- a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) all adverse and unexpected experiences or events that are both serious and unexpected;
- c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to the PREB for approval.

Members of the PREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the PREB.


 Clive Seligman Ph.D.

Chair, Psychology Expedited Research Ethics Board (PREB)

The other members of the 2008-2009 PREB are: David Dozois, Bill Fisher, Riley Hinson and Steve Lupker

CC: UWO Office of Research Ethics

This is an official document. Please retain the original in your files

Appendix B: Conversations (Sarcastic manipulation)

Karen: You took my Mp3 player!

Jane: Yea, why wouldn't I? You have the greatest taste in music in the world, after all.

Karen: I know you took it, so give it back.

Jane: Listen Sherlock, I didn't take your precious Mp3 Player.

Karen: Then who did?

Jane: Maybe your brilliant boyfriend lost it.

Karen: Leave my boyfriend out of this. You were the last one to have it.

Jane: It's just so great that my friend is accusing me of this. It really is.

Karen: All I want you to do is give it back.

Jane: I also appreciate you interrupting my lunch to confront me. Great job.

Karen: Listen, just check your stuff.

Jane: Sure thing, I'll just race home and search frantically all afternoon instead of going to class.

Karen: Well, I don't know where else it could be.

Jane: Did you check your own stuff, genius?

Karen: I'm sick of this.

Jane: Not me, I love these unfounded accusations.

Karen: They're not unfounded.

Jane: Yea, I am a big kleptomaniac- Always stealing things.

Karen: I just want it back.

Jane: This is not getting annoying or anything.

Karen: _____

Jane: _____

(Non-sarcastic manipulation)

Adam: You cheated off of my test.

Bob: No, I wouldn't risk getting caught by cheating off of you; you're an idiot.

Adam: Just admit that you did it. I saw you

Bob: You're wrong; I don't cheat off of useless people.

Adam: I don't want to get in trouble.

Bob: I'm not sorry, that's not my problem.

Adam: I can't fail this class and I don't want you to do it again.

Bob: You're wrong, I don't cheat.

Adam: I know you did it.

Bob: Listen moron, I didn't cheat off of you.

Adam: If I get in trouble, you're going down with me.

Bob: Your threats are so weak.

Adam: You should be worried

Bob: I'm not, you're pathetic.

Adam: If it comes down to it, I'll tell the professor the truth.

Bob: That's a load of crap.

Adam: And you will get in a lot more trouble than you are already in.

Bob: The professor isn't going to believe a nobody like you.

Adam: You're unreasonable.

Bob: Talking to you is really starting to get annoying.

Adam: _____

Bob: _____

(Sarcastic manipulation)

Scott: You lied about me!

Mike: And you are such an angel yourself.

Scott: Why did you say those things?

Mike: Poor baby is upset.

Scott: I don't appreciate you lying about me.

Mike: Really, because I thought you would

Scott: Now everyone thinks I'm crazy.

Mike: What a shame!

Scott: I think you should tell everyone the truth.

Mike: Yeah, I'll get right on that.

Scott: You're mad at me!

Mike: What a brilliant observation.

Scott: I really didn't do anything wrong.

Mike: As much as I love hearing you whine, I have a class to go to soon.

Scott: Well, I am going to tell everyone the truth.

Mike: I'm sure they'll believe you.

Scott: They will. They will see how you've been acting.

Mike: I'm so scared

Scott: I'd be worried if I were you.

Mike: Thank you for sharing. I really care.

Scott: _____

Mike: _____

(Non-sarcastic manipulation)

Andrea: You didn't invite me to the party.

Betsy: Took you long enough to figure that one out, moron.

Andrea: Why didn't you invite me? You've invited everyone else.

Betsy: Because you'd kill the party, all you drink is pepsi.

Andrea: So I don't drink. I still think I should come.

Betsy: I don't want to invite someone who makes everyone feel bad for drinking something a little stronger than soda.

Andrea: I'm not going to make everyone feel bad, that's ridiculous.

Betsy: You're definitely wrong. People like you will end up making the party boring.

Andrea: That's ridiculous.

Betsy: Inviting a loser like you doesn't sound like any fun at all.

Andrea: Everyone else thinks I should go.

Betsy: Listen, you're just not any fun and I'm still going to say 'no'.

Andrea: Clearly, this is ridiculous

Betsy: Is there anything else I can help you with today?

Andrea: I think you made the wrong decision.

Betsy: Well, I'm not sorry. You're just lame.

Andrea: I thought we were friends.

Betsy: I'm glad my other friends are easier to get along with.

Andrea: You'll regret this.

Betsy: I don't think I will.

Andrea: _____

Betsy: _____

(Sarcastic manipulation)

Steve: I can't believe you drove home drunk.

David: Right, and I'm drunk right now!

Steve: You did it on Saturday.

David: Well you are always right about everything. So I must have.

Steve: You could get arrested for pulling stuff like that.

David: You're right; I hear sirens and police right now.

Steve: Well, I think you should be more concerned about this stuff.

David: And you should really be concerned with my business.

Steve: I'm just saying

David: Please stick your nose in my business. I really appreciate it.

Steve: I think you might have a problem.

David: I agree.

Steve: I think you do.

David: Could it be that my problem is you? Can you wrap your genius brain around that?

Steve: You have to lay off the booze.

David: I'll make a note of that right now.

Steve: I think I am going to leave soon.

David: Such a shame

Steve: Don't say I didn't warn you.

David: It's always such a pleasure when we talk.

Steve: _____

David: _____

(Non-sarcastic manipulation)

Ed: Why haven't you been letting me have any say in the group project?

Jim: Because whatever you add will only contribute to us failing.

Ed: I know a lot about the topic.

Jim: Remember the last time when you said you knew so much about abnormal psychology and got us that horrible grade. A 'D'!

Ed: Just let me have more say!

Jim: I really don't care what you say, ass.

Ed: I think you should take my opinions seriously.

Jim: Well I don't care, please just go away.

Ed: I think the rest of the group will want me to participate.

Jim: You aren't always right.

Ed: I have things to say.

Jim: But nothing valid.

Ed: And you might be jealous

Jim: I am not jealous of a complete idiot.

Ed: You are!

Jim: You're incompetent.

Ed: I am smart.

Jim: Please don't tell me any more, idiot.

Ed: I'm going to contribute whether you like it or not.

Jim: No you aren't.

Ed: _____

Jim: _____

(Sarcastic manipulation)

Brittany: Why did you joke about what I was wearing?

Sara: I'm sorry. I guess I didn't get the memo that you can wear plaid and stripes.

Brittany: The outfit I'm wearing is fine.

Sara: You're right; I know absolutely nothing about style whatsoever.

Brittany: At least I don't go around talking about other people behind their back.

Sara: If only I could be perfect like you.

Brittany: You probably wouldn't like it if I went around saying those things about you.

Sara: Yea, I'll cry myself to sleep every night.

Brittany: Haven't you heard of 'do unto other's what you would have them do unto you'?

Sara: Thanks Mother Teresa.

Brittany: Just shut up about my outfit.

Sara: But it's so lovely.

Brittany: Everyone thinks you're being ridiculous.

Sara: I am so concerned about everyone else's opinion. I want to be just like you.

Brittany: Well not everyone likes your style either.

Sara: I'm crushed.

Brittany: We all don't have to hear your opinion either.

Sara: Thanks for the advice. You're so wise.

Brittany: This is so stupid.

Sara: Thank you captain obvious.

Brittany: _____

Sara: _____

(Non-sarcastic manipulation)

Susan: Stop picking on my brother!

Julia: It's not normal to dress like a freak.

Susan: Don't call him a freak.

Julia: I'm not sorry, he's the spawn of satan.

Susan: I would prefer if you shut up about it.

Julia: I don't care what you say.

Susan: I'm just trying to stick up for my brother.

Julia: You're pathetic.

Susan: So just lay off.

Julia: He also says idiotic things in class: really stupid.

Susan: Listen, he has his own unique style, he does his own thing.

Julia: His unique style is gross.

Susan: He's a nice guy, maybe you should be more like him.

Julia: I'm glad I'm not like him, I'm happy to dress normally.

Susan: You're being really ignorant.

Julia: You and your brother are annoying and weird.

Susan: If you don't stop picking on him, you'll be sorry.

Julia: No I won't.

Susan: You will.

Julia: Your threats don't scare me.

Susan: _____

Julia: _____

Appendix E: Relational Aggression Measure

	NOT AT ALL TRUE			SOMETIMES TRUE			VERY TRUE
I usually follow through with my commitments.	0	0	0	0	0	0	0
*I try to get my own way by bossing other people around.	0	0	0	0	0	0	0
I have a friend who ignores me or gives me the "cold shoulder" when s/he is angry with me.	0	0	0	0	0	0	0
I am willing to lend money to other people if they have a good reason for needing it.	0	0	0	0	0	0	0
*My friends know that I will think less of them if they do not do what I want them to do.	0	0	0	0	0	0	0
*I get jealous if one of my friends spends time with his/her other friends even when I am busy.	0	0	0	0	0	0	0
*When I am not invited to do something with a group of people, I will exclude those people from future activities.	0	0	0	0	0	0	0
I have been pushed or shoved by people when they are mad at me.	0	0	0	0	0	0	0
I am usually kind to other people.	0	0	0	0	0	0	0
I am usually willing to help out others.	0	0	0	0	0	0	0
*When I want something from a friend of mine, I act "cold" or indifferent towards them until I get what I want.	0	0	0	0	0	0	0
A friend of mine has gone "behind my back" and shared private information about me with other people.	0	0	0	0	0	0	0
I try to make sure that other people get invited to participate in group activities.	0	0	0	0	0	0	0
When someone makes me angry, I push or shove the person.	0	0	0	0	0	0	0
*I get mad or upset if a friend wants to be close friends with someone else.	0	0	0	0	0	0	0

*When I have been angry at, or jealous of someone, I have tried to damage that person's reputation by gossiping about him/her or by passing on negative information about him/her to other people.	0	0	0	0	0	0	0
*When someone does something that makes me angry, I try to embarrass that person or make them look stupid in front of his/her friends.	0	0	0	0	0	0	0
I am willing to give advice to others when asked for it.	0	0	0	0	0	0	0
*When I am mad at a person, I try to make sure s/he is excluded from group activities (going to the movies).	0	0	0	0	0	0	0
I make an effort to include other people in my conversations.	0	0	0	0	0	0	0
When I have been provoked by something a person has said or done, I have retaliated by threatening to physically harm that person.	0	0	0	0	0	0	0
I make other people feel welcome.	0	0	0	0	0	0	0
When someone has angered or provoked me in some way, I have reacted by hitting that person.	0	0	0	0	0	0	0
I have a friend who excludes me from doing things with her/him and her/his other friends when s/he is mad at me.	0	0	0	0	0	0	0
I have threatened to physically harm other people in order to control them.	0	0	0	0	0	0	0
*I have spread rumors about a person just to be mean.	0	0	0	0	0	0	0
When a friend of mine has been mad at me, other people have "taken sides" with her/him and been mad at me too.	0	0	0	0	0	0	0
I have a friend who has threatened to physically harm me in order to get his/her own way.	0	0	0	0	0	0	0
I am a good listener when someone has a problem to deal with.	0	0	0	0	0	0	0
*When someone hurts my feelings, I intentionally ignore them.	0	0	0	0	0	0	0
I try to help others out when they need it.	0	0	0	0	0	0	0
*I have intentionally ignored a person until they gave me my way about something.	0	0	0	0	0	0	0

Appendix F

Relational Aggression Correlation Matrix: RA-Question Correlations

	Condition			
	M-M, S	M-M, NS	F-F, S	F-F, NS
Closeness	0.05	0.06	-0.04	-0.04
Resolution	0.08	0.01	-0.03	0.07
Agg. Humor	-0.03	0.01	0.05	0.03
Vic. Humor	0.19	0.28	0.18	0.27
Appropriate	0.15	0.01	0.10	0.24
Agg. Polite	0.25	0.07	0.18	0.30
Vic. Polite	0.25	-0.19	0.24	0.27
Sarcastic	-0.05	0.03	0.10	0.02
Hurtful	0.06	0.01	-0.04	-0.02
Effective	0.08	0.04	-0.04	0.08
Anger	-0.21	-0.23	-0.14	-0.09
Verbal Agg.	0.03	0.09	-0.12	0.09
Soc. Stand.	0.04	0.21	-0.02	0.07
Rude	0.08	0.07	-0.02	-0.22

Appendix G

Intercorrelations of Muting the Meaning Questions

	Close	Resolved	Approp.	Anger	Rude	Verb.Aggress.	Hurtful
Close		.27	.09	-.16	-.15	-.10	-.03
Resolved			.12	-.22	-.41*	-.35*	-.22
Appropriate				-.48*	-.54*	-.35*	-.37*
Rude						.60*	.44*
Verb. Aggress.							.33
Hurtful							

Bonferroni Correction, $p = .001$

* $p < .001$

Appendix H

Intercorrelations Among Perspective Questions

	Vic Humor	Aggress. Humor	Vic Politeness	Aggress. Politeness
Vic Humor		-.023	.85*	.53*
Aggressor Humor			-.08	.15
Vic Politeness				.54*
Aggressor Politeness				

Bonferroni correction, $p = .003$

* $p < .003$