

**Sex differences in the relation of aggression
to Social Dominance Orientation
and Right Wing Authoritarianism**

Luke Howison

A thesis submitted to
Victoria University of Wellington
in fulfillment of the requirements for the degree of
Masters of Science in Psychology

ABSTRACT

Two general population studies examined the association of Social Dominance Orientation (SDO) and Right Wing Authoritarianism (RWA) with the Aggression Questionnaire, and any sex differences in this relationship. SDO and RWA were both associated with aggression; however, contradictory sex differences were found. In Study 1 (N = 270), SDO and aggression was associated for females but not males; the opposite was found in Study 2 (N = 178). A model of the relationships between SDO, RWA, sex, hostility, anger and physical aggression was constructed and evaluated for Study 1. Study 2 included additional measures including instrumental/expressive aggression, femininity/masculinity, gender group identification and sexism. SDO was related to instrumental aggression, suggesting that social dominators use aggression instrumentally. Masculinity/femininity did not have a major effect on the aggression-SDO/RWA relationship; however, gender identity mediated the relationship between sex and SDO, replicating previous challenges of the invariance hypothesis.

"There are some members of the public whose judgment I simply wouldn't trust and they're just a couple of heartbeats away from believing they have the right to go about acting as God's little pruning fork, ridding society of criminal scum."

- Kerre Woodham

2006

Acknowledgments

My most sincere thanks must be extended to my research supervisor Marc Wilson, who spent many hours sharing his extensive theoretical, practical and statistical knowledge of social psychology with me, not to mention lending me his advice and firm encouragement to ensure this work was completed. Several other researchers kindly gave me their time and expertise including David Lester of the Richard Stockton College of New Jersey, Chris Sibley of the University of Auckland and Jim Vess of Victoria University of Wellington. I must also acknowledge many of my friends and family members for their encouragement and help with the collection of questionnaire data, including Anne, Paul and Phil Howison, Dominic Tarr, Joel Pauling, Jessica Prentice, Kate Geange, Andre Goble and Leanne Schneller. Lastly I would like to thank all the participants who thoughtfully donated some of their valuable time to fill in questionnaires for this research.

Table of Contents

| | |
|--|-----|
| Abstract | 3 |
| Acknowledgements | 4 |
| Table of Contents | 5 |
| List of Tables and Figures | 6 |
| Introduction | 7 |
| Study 1 | |
| Method | 37 |
| Results | 40 |
| Discussion | 52 |
| Study 2 | |
| Introduction | 55 |
| Method | 64 |
| Results | 69 |
| Discussion | 87 |
| General Discussion | 91 |
| References | 98 |
| Appendix 1: Study 1 Questionnaire | 111 |
| Appendix 2: Study 2 Questionnaire | 122 |

List of Tables and Figures

Study 1

| | |
|--|----|
| <i>Table 1. Means and Standard deviations for all scales</i> | 40 |
| <i>Table 2. Correlations between Scales and Subscales</i> | 42 |
| <i>Table 3. Correlations between scales and subscales, with SDO, RWA, SDO-D and SDO-E, by sex</i> | 44 |
| <i>Table 4. Correlations between Aggression Questionnaire subscales and age, by sex</i> | 45 |
| <i>Table 5. Multiple Regression Analysis for Physical Aggression</i> | 46 |
| <i>Table 6. Multiple Regression Analysis for Hostility</i> | 47 |
| <i>Table 7. Multiple Regression Analysis for Overall Aggression</i> | 48 |
| <i>Figure 1. Path analysis model of the expected relationships between SDO, RWA, sex, Anger, Hostility and Physical Aggression</i> | 50 |
| <i>Figure 2. Standardised path analysis of the model presented in Figure 1</i> | 51 |

Study 2

| | |
|---|----|
| <i>Table 8. Means and standard deviations for all scales</i> | 59 |
| <i>Table 9. Overall Correlations</i> | 71 |
| <i>Table 10. Correlations by sex</i> | 74 |
| <i>Table 11. Correlations by sex (continued)</i> | 75 |
| <i>Table 12. Multiple Regression Analysis for Physical Aggression</i> | 77 |
| <i>Table 13. Multiple Regression Analysis for Hostility</i> | 79 |
| <i>Table 14. Multiple Regression Analysis for Verbal Aggression</i> | 81 |
| <i>Table 15. Multiple Regression Analysis for Anger</i> | 82 |
| <i>Table 16. Multiple Regression Analysis for Overall Aggression</i> | 83 |
| <i>Table 17. Multiple Regression Analysis for Instrumental Beliefs about Aggression</i> | 84 |
| <i>Table 18. Multiple Regression Analysis for Expressive Beliefs about Aggression</i> | 85 |
| <i>Table 19. Multiple Regression Analysis for SDO-D</i> | 86 |

On May 16, 2007, the New Zealand Parliament passed controversial legislation which repealed Section 59 of the Crimes Act (1961), with the intention of removing the defence of 'reasonable force' against assault in the corrective punishment or discipline of children. Before the bill passed, there was a controversy in New Zealand about the use of smacking in parental discipline, with pro-smacking supporters, including religious groups, marching on Parliament, and anti-smacking campaigners proclaiming that smacking children was synonymous with child abuse ("Destiny loses," 2007).

During the debate about the "Anti-Smacking Bill", different groups in New Zealand society expressed very strong opinions about the use of force to discipline children. So how does an individual form their idea of how society should view the use of aggression on an individual level? More specifically, how does individual-level aggression relate to group-based political/ideological attitudes such as Right Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO)? To investigate this issue, the concepts of RWA, SDO and aggression will be introduced and current psychological research in these three areas will be reviewed.

The roots of many developments in social psychology can be traced back to the end of World War II. Psychologists asked, for example: What caused the German Nazis and their collaborators to commit atrocities on such a large scale (Milgram, 1963)? How was Hitler able to gain so much support from the German people (Adorno, Frenkel-Brunswik, Levinson & Sanford, 1950)? Which aspects of his own personality led to his greed for power (Altemeyer, 1998)?

With these and other questions in mind, Adorno and colleagues (1950) built on earlier research into fascism (Reich, 1933; Fromm, 1936) to carry out an enormous, ground-breaking study of authoritarianism, using a psychodynamic approach with interviews and questionnaire-based measures. They described a cluster of traits called the *authoritarian personality*, containing several aspects: conventionalism; authoritarian submission; authoritarian aggression; anti-intraception (tendency to punish inferiors); superstition and stereotypy; belief in dominance, power and toughness; destructiveness and cynicism (generalised hostility); projectivity (projection of emotional impulses) and dangerous-world beliefs; and exaggerated concern with sexual issues.

Research since Adorno et al's time has teased apart the strands of this prototypical authoritarian personality and six aspects remain recognisable in modern research. For example, Altemeyer (1981) has argued that the core characteristics of authoritarianism are best described by *conventionalism*, *authoritarian aggression* and *authoritarian submission*. Though absent from Altemeyer's (1981) conception of authoritarianism, some of the traits hypothesized by Adorno et al (1950) live on in other, related theories. For example, *Belief in Dominance* bears some resemblance to the Social Dominance Orientation proposed by Jim Sidanius (1992), while *Dangerous-world Beliefs* are proposed by Duckitt (2001) to be a major factor in the formation of authoritarian attitudes. Additionally, Authoritarianism is found to have a significant correlation with *Hostility* (Ahmed & Lester, 2003; Duckitt, 2001).

Right Wing Authoritarianism

Adorno et al's (1950) measure of how likely an individual is to support fascism, the

California F-scale, initially popular though it was, has been harshly criticised (for a brief review, see Billings, Guastello & Rieke, 1993). There was some experimentation with improved versions of the scale, for example Ray's (1972) Balanced F Scale, but the most widely used replacement scale is the Right Wing Authoritarian (RWA) construct and scale, as developed by Altemeyer (1981). Altemeyer's development of Adorno (et al)'s ideas into the RWA construct has been described as “exemplary” compared to Adorno's “deeply flawed” work (Martin, 2001, p. 1). The Right Wing Authoritarianism scale measures a 'social attitude or ideological belief dimension' (Duckitt, 2001, p 45), a stable set of beliefs and attitudes centered on support for authoritarian leadership. RWA beliefs tend to include a rigid view of morality, fundamentalist religious beliefs, xenophobia and ethnocentrism. Overall, the key attitude of RWA is the belief that, ideally, legitimate authorities should have a strong religious leader who will censor those social groups who are viewed as physical or moral threats (Altemeyer, 1981; 1998). For instance, a high-RWA individual (henceforth used to refer to individuals scoring highly on the RWA scale) might indicate support for outlawing homosexual marriage or denying abortions to women (promiscuity and homosexuality being seen as morally threatening).

Altemeyer's conclusion is that the three key facets of Adorno's authoritarian personality are *authoritarian aggression*, *authoritarian submission* and *conventionalism*. Conventionalism is the tendency to accept and obey social conventions and the rules of authority figures. Authoritarian aggression is characterised by an aggressive attitude towards individuals or groups disliked by authorities, and authoritarian submission is submission to authorities and authority figures. The RWA scale (Altemeyer, 1998) contains thirty items such as "Obedience and respect for authority are the most important values children should learn," (authoritarian submission), "It may be considered old

fashioned by some, but having a proper normal appearance is still the mark of a gentleman and, especially, a lady," (conventionalism) and "Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibre and traditional beliefs" (authoritarian aggression). Some RWA scale items, however, include reference to more than one of the three clusters, with some indexing all three.

High scores on the RWA scale are associated with conservative, traditional, fundamentally religious, rigidly moral, racist, sexist, xenophobic, homophobic and generally prejudiced beliefs and attitudes (Altemeyer, 1981, 1998). The consistent correlation of RWA beliefs with (and therefore the potential to explain) a wide variety of prejudiced attitudes is perhaps the main reason for the popularity of the scale among modern researchers (McFarland & Adelson, 1996).

Research rarely finds a sex difference in levels of RWA (Altemeyer, 1998; Duckitt, 2001). Sex differences have been found; for example Altemeyer (1988) found a significant but slight difference, with men having higher RWA scores. Rubinstein (1995) reported that men in an Israeli sample had significantly higher RWA scores but posited that this was an artifact of the higher religiosity of the men in the sample. Results by Duncan, Peterson and Winter (1997) suggested higher male RWA scores which approached, but did not achieve, significance. Alternatively, Whitley and Ægisdóttir (2000) described higher mean RWA scores for females in their sample, but again the difference was non-significant. Several other researchers have reported no sex difference in RWA levels (Crowson, Debacker and Thoma, 2005, Guastello and Peissig, 1998, Heaven and Quintin, 2003). Other research simply fails to report RWA sex differences, or even state RWA means by sex (e.g. McHoskey, 1996; Peterson and Duncan, 1999; Strube and Rahimi, 2006; Van

Hiel and Kossowska, 2006). In summary, despite some research reports that males have higher levels of RWA than women, most studies find no significant sex difference.

RWA and Sexual Aggression

Begany and Milburn (2002) investigated the relationship of right wing authoritarianism to the likelihood of sexual harassment in a sample of men, using a vignette scenario. RWA was a significant predictor of sexual harassment, and that endorsement of rape myths mediated the RWA – sexual harassment relationship. Sexual harassment is thought to be part of the same continuum as violent sexual aggression and rape (Begany & Milburn, 2002). Walker, Rowe and Quinsey (1993) related RWA to various measures of sexual aggression in a male sample and found that high RWA scores were associated with more sex guilt, less sexual partners and less use of pornography (which makes sense in light of high-RWA's often religious beliefs). However, RWA was also associated with an increased self-reported likelihood of the subjects to rape or force sex, increased agreement that “rape victims are responsible for what happened”, and that “women enjoy sexual violence” (Walker, Rowe & Quinsey, 1993, p. 1044). Given social desirability effects, this association between sexual aggression and RWA may be even higher than measured. To explain these findings, the researchers hypothesised that higher-RWA men believed sexual aggression was justified because of a perception that women are a weaker and less powerful group. This would follow the authoritarian tradition of mistreating non-hegemonic social groups.

Social Dominance Orientation

Adorno et al's (1950) authoritarianism research focused on the ideological 'follower' personalities that might have supported a Hitler-like leader, and assumed that prejudiced leaders (like Hitler himself) would be too rare to warrant study. Some research prior to 1993 hinted at the possible measurement of prejudiced leader personalities; for instance Billings, Guastello and Rieke (1993) suggest that directive leaders thrive when surrounded by right-wing authoritarian subordinates. Later that year a new scale measuring aspects of what might be considered an authoritarian leadership type, the Social Dominance Orientation, was published by Jim Sidanius and Felicia Pratto, among others (Sidanius, 1993; Pratto, Sidanius, Stallworth & Malle, 1994), though Sidanius and colleagues did not explicitly construe the concept in these terms.

Social Dominance Orientation (SDO) is a 'social attitude or ideological belief dimension' (Duckitt, 2001, p 45) which measures individual differences in levels of group-based dominance and prejudice (Sidanius & Pratto, 1993). SDO beliefs have been found to strongly predict a wide range of prejudiced attitudes from racism, anti-egalitarianism and militarism (Sidanius, Pratto & Bobo, 1994), negative views of women's rights (Heaven, 1999), nationalism and chauvinism (Pratto, Stallworth & Sidanius, 1997), in fact many of the same constructs as are found to be associated with RWA. The strong correlation between SDO and a wide range of prejudiced attitudes points to SDO as a "general orientation" (Pratto, Stallworth and Sidanius, 1997, p 52) towards prejudice, and the connection between prejudiced attitudes and SDO (as with RWA) is one major factor contributing to the current popularity of SDO research. Individuals who score highly on the SDO scale tend to agree with statements such as "Some groups of people are simply

inferior to other groups" and disagree with statements such as "Group equality should be our ideal" (a reverse-scored item).

The SDO scale also includes items which endorse interpersonal dominance, such as "To get ahead in life, it is sometimes necessary to step on other groups." Endorsement of this item suggests the subject views 'getting ahead in life' as important, and that using force against others is acceptable in pursuit of this goal. Sidanius (1994) describes SDO as an attitude wherein "*individuals desire social dominance and superiority for themselves and their primordial groups over other groups*" (p. 209, emphasis added) i.e., SDO contains elements of both group-based and individual dominance. Yet Pratto et al (1994) describe SDO as an attitude solely concerned with group-based dominance and "independent from interpersonal dominance" (p. 751). In their description of several large samples (Pratto, Sidanius, Stallworth and Malle, 1994), SDO was not found to correlate significantly with measures of personal dominance on the California Personality Inventory and Jackson Personality Research Form over the studies as a whole. However, two of their samples SDO *did* correlate with personal dominance on these measures. On the other hand, Altemeyer (1998) construes SDO as a measure which does reflect aspects of personal dominance, describing high-SDO individuals as aspiring to gain more power and climb the social ladder. Altemeyer's research demonstrated that high SDO scorers are competitive on a personal level, agreeing with items such as "Winning is more important than how you play the game", and scoring highly on measures of Machiavellianism (Christie & Geis, 1970). High-SDO individuals agreed with Machiavellian items such as "There really is no such thing as 'right and wrong'. It all boils down to what you can get away with." Altemeyer's conception of SDO as including elements of personal dominance is at odds with Pratto et al's (1994) ideas. This is an example of conflicting perspectives toward basic

aspects of the SDO construct, which might be helped by a further examination of social dominance scores versus personal dominance.

SDO (in common with RWA) is described as a unitary construct (Pratto et al, 1994) but Jost and Thompson (1999) have found two major factors, described as group-based dominance (SDO-D) and opposition to equality (SDO-E). The group-based dominance factor comes from agreement with the negatively worded items on the SDO scale (“Sometimes groups must be kept in their place”) and the opposition-to-equality factor comes from disagreement with the positively worded items (“It would be good if groups could be equal”). They find these two factors persist even when the SDO items are reworded to balance negative and positive wordings between SDO-D and SDO-E items. Jost and Thompson describe a further complexity of SDO research: SDO-D and SDO-E are highly intercorrelated among hegemonic groups, but less highly correlated for non-hegemonic groups (i.e., white vs black Americans). The use of a primarily white (and hence hegemonic group) sample, they suggest, is why Pratto et al (1994) found SDO to be a unitary construct.

Social Dominance Theory

The concept of the Social Dominance Orientation does not float untethered in ideological space. SDO was proposed by Sidanius and Pratto (1993; see also Sidanius & Pratto, 1999) as part of their Social Dominance Theory (SDT), a consideration of group conflict which describes human society as consisting of oppressive group-based hierarchical structures. The key principles of Social Dominance Theory are that societies are stratified by age, sex and group. Group divisions are based on ethnicity, religion,

nationality, and so on. Human social hierarchies consist of a hegemonic group at the top and negative reference groups at the bottom. More powerful social roles are increasingly likely to be occupied by hegemonic group members (for example, older white males). Males are more dominant than females, and they possess more political power (the “iron law of andrarchy” (Sidanius, 1992, p 14). Most high-status positions are held by males (Sidanius, 1992). Prejudiced beliefs such as racism, sexism, nationalism and classism are all manifestations of this same principle of social hierarchy. The origin of social hierarchies is given an evolutionary explanation: prehistoric human societies organised in hierarchies were more efficient at combat than non-hierarchical groups, giving a competitive advantage to groups organised in social hierarchies (Sidanius, 1992).

Various processes of hierarchical discrimination are driven by legitimizing myths (Sidanius, 1992), which are beliefs justifying social dominance such as paternalistic myths (hegemony serves society, looks after incapable minorities), reciprocal myths (suggestions that hegemonic groups and outgroups are actually equal), and sacred myths (the divine right of kings - a religion-approved mandate for hegemony to govern). Pratto et al (1994) suggest the Western idea of meritocracy and individual achievement as an example of a legitimizing myth, and argues that meritocracy produces only an illusion of fairness. SDT draws on social identity theory, suggesting that social comparison processes drive individual discrimination (ingroup favouritism). They also propose that discriminatory acts (such as insulting remarks about minorities) are performed because they increase an individual's self-esteem.

Consistent with the assumption that males tend to be more dominant than females, SDT predicts that males will tend to have a higher social dominance orientation. As such,

males will tend to function as hierarchy enforcers, that is, they will carry out acts of discrimination such as the systematic terror by police officers (Sidanius, 1992) and the extreme example of death squads and concentration camps. In a demonstration of the tendency of hierarchy enforcers to support social dominance, police officers in Los Angeles were found to have significantly higher social dominance orientation scores than random samples of the general population. Furthermore, public defenders (an example of hierarchy attenuators) were found to have significantly lower SDO scores than both police officers and the general population (Sidanius, Liu, Pratto & Shaw, 1994). Pratto, Stallworth, Sidanius and Siers (1997) performed an archival analysis and concluded that males disproportionately attain hierarchy-enhancing positions (roles that serve to enforce hierarchical group status) in society while women tend towards hierarchy-attenuating occupations (the function of which is to reduce hierarchical differentiation).

Consistent with this, there is a consistent sex difference in SDO scores, with men scoring approximately 10% higher than women (Sidanius, Pratto & Bobo, 1994; Pratto, Stallworth & Sidanius, 1997). This difference appears to be present regardless of age, social class, religion, education, political affiliation, ethnicity, race, nationality or gender role (Sidanius, Pratto & Bobo, 1994; Sidanius, Levin, Liu & Pratto, 2000). Although the sex difference is relatively small, it is invariant across cultures, leading SDT theorists to propose that it reflects a biological difference produced by evolutionary selection pressures favouring high-SDO males (Sidanius, 1992). If male dominance is biological in nature, there is little hope that patriarchal social hierarchies (as hypothesised by SDT) can ever be substantially changed. This biosocial model of SDO with males possessing a consistently higher score, *regardless of covariate*, is called the invariance hypothesis (Sidanius, Pratto & Bobo, 1994).

Wilson and Liu (2003) challenged the invariance hypothesis by proposing that the gender-SDO relationship (i.e., males possessing higher SDO) is mediated by gender identification; the extent to which people identify with their gender group. Both a student and a general-population sample were found to have their social dominance orientation scores mediated by gender identification. Specifically, the more male participants identified with their own gender, the higher their social dominance scores were, whereas the more female participants identified with their gender, the lower their social dominance scores were. Furthermore, two different gender identification measures were used to demonstrate the robustness of the finding. Obviously this presents a strong counter-example to the invariance hypothesis.

Foels and Pappas (2004) extended this attack on the invariance hypothesis by separating the concept of socially constructed gender (psychological masculinity/femininity). and the concept of biologically determined sex (male/female), and set up a study of Jost and Thompson's (2000) two SDO factors in relation to masculinity and femininity. They found that the relationship between sex and group-based dominance (SDO-D) was mediated by masculinity, while the relationship between sex and opposition to equality (SDO-E) was mediated by femininity. Masculinity and femininity accounted for 10% of the variation in SDO-E and SDO-D, whereas biological sex explained very little variation in SDO-D and SDO-E (around 1%). Biological sex, then, is related to SDO because males tend to be more masculine and less feminine, with the reverse true for females. Foels and Pappas conclude that social dominance orientation is more likely to have a socially constructed origin (as per social identity theory) rather than a biological one (as per social dominance theory). The observation of men invariably having

higher SDO than women is explained by the ubiquity of patriarchal cultures in human history.

SDO and Androgens

Sidanius' (1992) Social Dominance Theory suggested the difference in dominance between men and women can be explained biologically by varying levels of androgens, primarily testosterone. Male levels of testosterone are much higher than that of females. Higher levels of androgens are correlated with sexual aggression, dominance, spontaneous aggression and decreased restraint of aggression. There is also a correlation between gains in social status and increased testosterone (Mazur & Booth, 1998); however, the relationship between testosterone and status is not a simple one; androgens are thought to be part of a feedback mechanism rather than a simple floating indicator of status (Josephs, Sellers, Newman & Mehta, 2006). Male androgens also reflect the asymmetry of social groups. High-testosterone males in negative reference groups are much more likely to be delinquent criminals and end up in jail, or victims of homicide. High-testosterone males in the hegemonic group will tend to quickly climb the social ladder and be rewarded with social/political power (Sidanius, 1992). Thus there is an interaction between social group membership, social dominance orientation and testosterone.

SDO and RWA

Duckitt (2001; Duckitt, Wagner, Plessis & Birum, 2002) uses the concepts of Social Dominance Orientation and Right Wing Authoritarianism as part of a larger model of prejudice. He suggests that RWA and SDO are produced by socialization in childhood

shaping the adult personality and worldview. Essentially, punitive, strict or harsh socialisation in childhood tends to cause social conformity in adulthood. This leads to a view of the world as a dangerous, dog-eats-dog place. This view leads naturally to RWA beliefs, which influence ingroup and outgroup attitudes. Similarly, unaffectionate socialisation in childhood tends to produce a tough-minded adult who views the world as a competitive, zero-sum game, similar to the jungle of the evolutionary past. A desire to compete leads naturally to SDO beliefs, which, again, influence ingroup and outgroup attitudes.

There is a close interaction between the two streams. Firstly the two parenting styles, punitive socialisation and unaffectionate socialisation, are not mutually exclusive but are potentially both present. A competitive-jungle worldview is entirely compatible with seeing the world as a dangerous place. Once a person has RWA beliefs, Duckitt finds, they tend to adopt matching, compatible SDO beliefs (and vice versa). Finally, outgroup and ingroup attitudes influence each other. After developing this extensive theoretical model, Duckitt tested his model using more than 500 Auckland University students. He used structural equation modeling with correlational data to test the predictions of relationships between SDO, RWA, worldviews, parenting styles, and ingroup/outgroup attitudes. All the predicted pathways were found to have significant correlations in the predicted direction, supporting the theoretical model. A repetition of the study in South Africa produced broadly similar results, with overall prejudice higher in South Africa (Duckitt, 2001). Another replication comparing American and White Afrikaner students similarly supported the model (Duckitt, Wagner, Plessis & Birum, 2002).

Duckitt also found a few unpredicted significant correlations. Dangerous-world

beliefs directly affected anti-minority attitudes. Unaffectionate socialization had a negative correlation with social conformity; and unaffectionate parenting style reduces social conformity beliefs.

Duckitt (2001) further examined the complexities of the interaction between RWA, SDO and a variety of specific ideological/prejudicial beliefs and behaviour. For instance, RWA beliefs are activated by social threat or threatening outgroups, whereas SDO beliefs are activated by competition and intergroup inequalities in status and power. RWA is a stronger predictor of prejudice when the outgroup is threatening. When group status is unstable, SDO is associated with higher ingroup bias (compared to stable status situations). Outgroup liking is best predicted by similarity to ingroup, while outgroup respect is predicted by status and technological advancement. Duckitt concludes that RWA and SDO have been well studied, and points out that this way of examining belief-paradigms and motivation-schemas could also be useful for an examination of anti-authoritarian-libertarian and egalitarian-altruistic ideologies.

Though SDO and RWA tend to predict similar things, Pratto et al (1994) argue that SDO is quite distinct from RWA, and found only a small correlation (.14, extended to .28 when corrected for attenuation). Altemeyer (1998) found similar correlations of .18 to .11 in student samples, and up to .21 in adult samples. However some general-population samples have found larger degrees of correlation between SDO and RWA, for instance Wilson (under review) found a significant correlation of .46 in an adult general population sample. Roccato and Ricolfi (2005) performed a meta-analysis on the correlation of RWA and SDO and determined that the correlation between the two was increased by strong ideological contrasts in the country under study. In those countries with strong ideological

contrast (including New Zealand), adult samples had larger SDO-RWA correlations than student samples. Furthermore, various political militant groups were observed to have widely varying SDO-RWA correlations, most notably members of a fascist right-wing party which had “the only strongly negative correlation in the history of studies of the relationships between RWA and SDO” (Roccato & Ricolfi, 2005, p. 193).

When taken together, SDO and RWA are very strong predictors of many forms of prejudice, such as sexist, racist and anti-gay attitudes (Duckitt, 2001), and explain up to 58% of variance in prejudice scores (McFarland & Adelson, 1996; Altemeyer, 1998). They are also strongly associated with political attitudes. Together with values, SDO and RWA explain up to 60% of the variance in political conservatism scores (Wilson, under review).

Double Highs

Individuals with both high SDO and high RWA scores have been labeled "Double Highs" and are conceptualised as dominant leaders driven to become leaders of authoritarian groups, the obvious hypothetical exemplar being Hitler (Altemeyer, 1998; Altemeyer, 2004; Duckitt, 2001). This is vital because Right Wing Authoritarians by themselves are reluctant to seize power; and high Social Dominators by themselves may not receive many votes (Altemeyer, 2004). Individuals high on both traits, however, will not only perceive a strong, prejudiced leader to be desirable, but see themselves as the ideal person for the job. With backing from fearful high-RWA voters, the only thing Double Highs have to fear is other Double Highs stabbing them in the back on the way up the hierarchy (Altemeyer, 2004).

Altemeyer (1998) developed a measure called the Personal Power, Meanness and Dominance Scale, in which participants could agree to being “cold blooded and vengeful”, playing “practical jokes that can sometimes really hurt people” and admit that they “will do [their] best to destroy anyone who deliberately blocks [their] plans and goals” (Altemeyer, 1998, p 74). High SDO individuals tended to endorse these and similar items, and so Altemeyer describes the Social Dominance Orientation as including elements of Machiavellianism and personal dominance. Although these items do not explicitly describe the use of force for personal gain, there is a strong undercurrent of being ruthless and doing whatever is necessary to achieve personal goals of domination. This leads naturally to a suspicion that socially dominant individuals might not be averse to using instrumental violence in their quest to dominate others.

Aggression

Aggression is a word that can be used to describe a wide range of human behaviour, from angrily slamming a door during an argument to a full-scale military invasion. Aggression as it relates to the study of psychology can be defined as *hostile or destructive behaviour or actions*. Associated emotions such as frustration or anger are also relevant. Questionnaire measures have been developed to measure individual predispositions toward aggressive behaviour (e.g., Izama, Kodama & Nomura, 2005; Ramirez, Andreu and Fujihara, 2001). Because aggression encompasses a complex set of behaviours, it is conceptualised not as a unitary construct, but as several related components. For instance the 1957 Buss and Durkee Hostility Inventory measured seven subscales; Assault, Irritability, Indirect Aggression, Negativism, Resentment, Suspicion and Verbal

Aggression (Buss & Perry, 1992). Here there are at least two types of distinction in aggressive behaviour: *action* vs. *emotion* and *direct* vs. *indirect* aggression. Other dimensions have been described such as *instrumental* vs. *expressive* and *predatory* vs. *self-defensive* aggression (Campbell, 1993).

Buss and Perry (1992) developed a self-report aggression measure and neatly sidestepped the complexity of classifying aggressive behaviour by motivation or type by using factor analysis to capture the most important elements of aggression: Anger, Hostility, Physical Aggression and Verbal Aggression. These are essentially two types of direct aggression behaviour (physical and verbal) and two types of aggression-relevant emotional states (anger and hostility). The resulting measure and subscales is collectively known as the Aggression Questionnaire (AQ), is internally consistent, and stable over time. Buss and Perry describe aggression as a personality-level variable and refer to it as *trait aggression*. The measure consists of 29 items, which produce both an overall measure of aggression, and scores for each of the four subscales: Physical Aggression ("If somebody hits me, I hit back"), Verbal Aggression ("My friends say that I'm somewhat argumentative"), Anger ("When frustrated, I let my irritation show"), and Hostility ("I wonder why sometimes I feel so bitter about things").

The AQ has been widely used to study, for example, the relationship of aggression to values, personality traits and alcohol consumption (Tremblay & Ewart, 2004), a comparison of self-other ratings of hostility (Izama, Kodama & Nomura, 2005) and aggression during menstruation (Ritter, 2003). The scale has been translated and validated in countries such as Germany (von Collani & Werner, 2005), Italy (Fossati, Maffei, Acquarini & Di Ceglie, 2003), Spain and Japan (Ramirez, Andreu and Fujihara, 2001).

Correlates of Aggression

(a) Aggression and Sex

Buss and Perry (1992) and other researchers (Tremblay & Ewart, 2004) find consistent sex differences in aggression, with males scoring substantially higher on Physical Aggression and slightly higher on Verbal Aggression and Hostility. Anger does not exhibit any consistent significant sex difference. In general, violent or anti-social behavior is performed more often by men than women. For instance, Moffitt, Caspi, Rutter and Silva (2001) as part of an important longitudinal cohort study of Dunedin youth, found that anti-social behavior was more extreme in males, and that more males than females met the criteria for a variety of violent or antisocial disorders. However, although women perform less violent offences, they are violent and aggressive for the same reasons as men (Moffitt et al, 2001) and are capable of performing extreme acts of violence just as men are (Kirsta, 1994). Anderson and Aymami (1993) suggest that as women adopt more masculine roles and take up more social, economic and political power, they will find themselves in more situations that encourage aggressive behavior.

(b) Aggression and RWA

Dill, Anderson, Anderson and Deuser (1997) describe hostile attitudes as a fundamental component of the authoritarian personality. Adorno et al (1950) included hostility as an important part of the authoritarian personality. Thus one might expect hostility, as measured by the Aggression Questionnaire, to be related to RWA beliefs.

(c) SDO and Aggression

McFarland and Adelson's (1996) omnibus study of prejudice included the Aggression Questionnaire (AQ) measure of aggressive behavior (Buss & Perry, 1992), finding that in both student and adult samples, social dominance orientation scores were significantly but modestly correlated with the overall AQ score. Similarly, Lippa and Arad (1999) included social dominance and the AQ subscales in their study and reported that SDO and physical aggression scores were significantly yet modestly correlated for both men and women in a student sample. The other AQ subscales did not have significant correlations, and the overall AQ score was not reported. In general, research which closely examines the link between social dominance orientation and aggressive behavior is rare.

(d) Aggression, SDO, RWA and Personality

A possible mediating factor between aggression, RWA and SDO is personality. The predominant modern measure of personality is the 'Big Five' model (Costa & McCrae, 1997; John & Srivastava, 1999). As the name suggests, the Big Five or OCEAN model contains five broad personality traits which research suggests contain the most explanatory power: Extraversion (energy and the tendency to seek the company of others), Conscientiousness (self-discipline and planning vs. spontaneousness), Agreeableness (warm and cooperative vs. suspicious and cold), Neuroticism (emotional stability vs instability and tending to feel angry, anxious and depressed easily), and Openness to Experience (conservatism vs. imagination, curiosity and willingness to try new things). Given that personality variables describe emotional tendencies, they potentially correlate

with aggressive feelings and behaviours. For instance, Tremblay and Ewart (2005) found that physical aggression was significantly negatively correlated with Agreeableness. Heaven and Bucci (2001) measured SDO and personality variables and found that Agreeableness was significantly correlated with SDO.

Pratto et al (1994) also found a correlation between SDO and Agreeableness of, although in another sample they found no correlation. Tremblay and Ewart (2004) suggested that the physical aggression - Agreeableness link could be via competitiveness. High SDO scorers are more likely to be competitive (Altemeyer, 1998). Given that high-SDO scorers are conceptualised as more competitive, ruthless and socially dominant (Altemeyer, 1998), it is expected that high SDO scores will be associated with higher aggression, particularly physical aggression, scores.

The personality variable of Openness is moderately related to RWA and SDO (Heaven & Bucci, 2001) and Pratto et al (1994) also found a moderate correlation between SDO and Openness. However Sharpe and Desai (2001) found aggression, including physical aggression, to be unrelated to Openness. One possible link between physical aggression and RWA is the personality variable of Conscientiousness. Tremblay and Ewart found a significant correlation between physical aggression and Conscientiousness. Heaven and Bucci (2001) found that Conscientiousness and RWA were significantly positively correlated. This suggests that RWA and physical aggression might be inversely related.

Lippa and Arad (1999) found that Agreeableness was significantly negatively correlated with SDO for both men and women, as measured by standard questionnaires and

also in structured interviews. Their questionnaire study found sex differences, with Openness negatively correlated with RWA for white women and Extraversion positively correlated with RWA for men.

Recently, Ekehammar, Akrami, Gylje and Zakrisson (2004) used a structural equation modeling approach to describe the relationship between the Big Five personality variables, SDO, RWA and prejudice. The Big Five did not have a direct effect on prejudice, but did influence prejudice indirectly via RWA and SDO. Extraversion, Openness and Conscientiousness acted through RWA and Agreeableness acted through SDO.

In summary, a consideration of personality variables finds that physical aggression is negatively associated with the personality trait of Agreeableness, as is higher levels of SDO, suggesting that SDO and physical aggression could be positively related.

(e) Aggression and Testosterone

Aggression has both biological and socialised elements (Campbell, 1993). Males possess both higher levels of testosterone and higher levels of aggression (Sidanius, 1992). Testosterone is observed to affect aggression in humans, for example one double-blind study gave injections of testosterone to eight men, which resulted in small increases in anger and hostility (as measured by the Aggression Questionnaire) and gave subjects more energy (O'Connor, Archer & Wu, 2004). Sidanius (1992) speculated that androgens may mediate the relationship between SDO and sex, noting primarily that males tend to have higher SDO scores than females, and are also observed to be more socially hierarchical.

Sidanius suggests that the biological reason for this difference in dominance is increased levels of androgens, primarily testosterone.

An overview of testosterone research on male subjects by Mazur and Booth (1998) suggests that testosterone affects males differently in childhood, puberty and adulthood. Testosterone increases before competitive situations such as sports matches, computer games, and while vying for romantic attention. Winners in these situations experience a testosterone increase, while losers experience a testosterone decrease. This pattern appears in nonphysical as well as physical competition, and in response to symbolic challenges and status changes among men. Higher levels of testosterone increase dominant, aggressive, anti-social behaviour (for example Dabbs, Carr, Frady & Riad, 1995, cited in Mazur & Booth, 1998) . In contrast, research into testosterone response in women suggests that while higher testosterone levels are sometimes associated with dominant behaviour, there is generally no change before or after competitive situations. The effect of competition on testosterone, then, is male-specific (for example, Booth & Dabbs (1995), cited in Mazur & Booth, 1998).

Higher levels of androgens are correlated with sexual aggression, dominance, spontaneous aggression and decreased restraint of aggression (Sidanius, 1992). There is also a correlation between gains in social status and increased testosterone. Mazur and Booth (1998) have suggested that levels of testosterone act as signals to individuals, such that when losing status, they back down, or when gaining status, they become more dominant. Thus there is a potential link between social dominance and aggression.

A more complex view of the link between testosterone and status is presented by

Josephs et al (2006) who have developed the mismatch hypothesis, whereby high-status, high-testosterone individuals perform best in situations of high status, but poorly in positions of low status. Conversely low-status, low-testosterone individuals perform at their best in situations of low status, and poorly in positions of high status. Note however that this mechanism focusses on interpersonal dominance rather than the group-based dominance measured by SDO as conceptualised by Sidanius and Pratto (1993).

Ward (1995) has challenged Sidanius' (1992) proposed testosterone-SDO link, arguing that it is no more than a myth, and that aggression is a learned behaviour, unaffected by biological factors such as testosterone. Male dominance, then, is the result of upbringing rather than androgens. Ward argues in favour of socialised gender differences on both SDO and aggression. However, the argument is contradicted by research showing a very consistent sex difference in both SDO (Pratto, Sidanius, Stallworth & Malle, 1994) and aggression (Buss & Perry, 1992; Mazur and Booth, 1998) and as such, remains a minority viewpoint. Josephs et al (2006) argue that the difficulty in linking aggression with testosterone is due to the mechanism being activated only in certain situations, namely when status is threatened. Thus the aggression-testosterone link is primarily observable in experimental situations of status change threat. Specifying the exact mechanism of testosterone and dominance/status change is not essential; either way, high status situations appears to produce both increased dominance (SDO) and increased aggression. Given this association, some correlation between SDO and aggression might be expected.

Previous research linking Aggression, SDO and RWA

Adorno *et al* (1950) noted that "the problem of "aggression" obviously calls for special attention" (p. 450); indeed the trigger for authoritarianism research, World War II, was perhaps the most visible, brutal example of widespread personal aggression against minorities such as Jews, homosexuals, the disabled, and other non-German races. Given the historical tendency of dominant individuals and authorities to use physical aggression to dominate and control others, one might expect that the relationship of SDO and RWA with personal aggression has already been extensively examined. Yet despite the inclusion of authoritarian aggression as a key component of the RWA construct (Altemeyer, 1981), personal aggression in relation to RWA has not been well-studied (see Lippa & Arad, 1999, for an exception). Instead, research has focused on attitude measures such as support for aggression by authorities and aggressive attitudes towards minorities (Altemeyer, 1998), rather than more generalised aggression as a behavioural variable.

At the level of scale content, the SDO scale itself includes items which could be described as supporting the use of interpersonal aggression, such as "In getting what you want, it is sometimes necessary to use force against other groups." Similarly the RWA scale includes phrases such as "get rid of the 'rotten apples' who have ruined everything", "silence the troublemakers spreading bad ideas" and "Once our government leaders give us the go-ahead, it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within". Endorsement of these items clearly implies a willingness to use aggression to punish others.

Some research has examined personal aggression in relation to authoritarianism.

Ahmed and Lester (2003) found authoritarian attitudes were related to all the Aggression Questionnaire subscales in a small student population, although this study used the California F scale rather than the well-validated RWA scale. When broken down by sex (Lester, personal communication, 2006), female F-scores were correlated with higher physical and verbal aggression, and hostility. Male F-scores were associated with anger, physical aggression and hostility (though less than for females) and not associated at all with verbal aggression. Reported differences may be affected by the low number of men in the sample (n=35). The sex difference on verbal aggression in particular approaches significance.

High-RWA men have also been found to be more sexually aggressive and were more likely to endorse sexual harassment, rape or forced sex (Walker, Rowe & Quinsey, 1993; Begany & Milburn, 2002). Duckitt (2001) suggests that high-RWA individuals tend to be more hostile due to their view of the world as a dangerous place.

Lippa and Arad (1999) provide an excellent starting reference for the present study, having measured SDO, RWA and aggression (using the Aggression Questionnaire) with a sample of 411 students. They found that RWA was not related to aggression, and that SDO was positively associated with physical aggression. There was one potential sex difference, with women having a significant correlation between SDO and hostility, compared to a non-significant correlation for males.

McFarland and Adelson (1996) studied both student and adult samples and in their first study found that overall aggression (as measured by the Aggression Questionnaire) was negatively associated with RWA for adults and students, and positively associated

with SDO for adults and students. In a second study, aggression did not have any significant associations with RWA for adults or students. Aggression was significantly, if weakly and positively associated with SDO and even more strongly associated for students. However, McFarland and Adelson did not report subtypes of aggression, confusingly refer to the overall aggression score as "hostile aggressiveness" and did not break samples down by gender.

There are several inconsistencies in research to date. In student samples, there is a significant positive link between F-scores and aggression, with a sex difference in the pattern of association that approaches significance (Ahmed & Lester, 2003). However another study finds that there is no association for RWA and aggression, which is odd given the apparent similarity between the F Scale and RWA in measuring authoritarianism; there is no sex difference either (Lippa & Arad, 1999). In yet another study there is a significant *negative* relationship between RWA and aggression (McFarland & Adelson, 1996).

There is also a difference in the size of correlations between RWA and SDO in adult and student samples (Roccato & Ricolfi, 2005), which is problematic since the majority of studies examining SDO and RWA have used student samples. Sears (1986) cautions against the overuse of student samples because college students are more likely to have less crystallised (inconsistent) attitudes, stronger tendencies to comply with authority and more unstable peer group relationships. This may affect research on RWA (compliance with authorities) and SDO beliefs (membership of, and attitudes towards, social groups). Both SDO and RWA examine attitudes; if the majority of a sample have inconsistent attitudes, results may be less valid compared with an adult or general population sample

with more consistent attitudes. For instance, student samples find a RWA-SDO correlation of .20 or less, whereas adult population samples find correlations up to .46 (Wilson, under review; Roccato & Ricolfi, 2005). If our ultimate aim is to describe human nature, it may be sensible for further research to attempt to use general population samples to study SDO and RWA, rather than convenience samples of captive undergraduates.

Some research into RWA and aggression has focused on sexual aggression rather than wider aspects of aggression, or used older measures of authoritarianism; and there are inconsistencies between different studies. SDO was found to correlate with aggression in both student and adult samples (McFarland & Adelson, 1996); SDO was associated with physical aggression in a student sample (Lippa & Arad, 1999). There is also a potential sex difference whereby hostility was associated with SDO for women but not men (Lippa & Arad, 1999). The current study sets out to closely examine the relationship between SDO, RWA and aggression, (as measured by Buss and Perry's (1992) Aggression Questionnaire) and elucidate any gender differences which may be observed in those relations.

The importance of the current study is underlined by recent findings suggesting that the problem of domestic violence is not restricted to male violence against women; several studies suggest that women are physically abusive to their male partners at a rate equaling or exceeding the reverse (Straus, 1997; Straus, 2005). Abused male partners are much less likely to be hospitalised with injuries (due to women's reduced upper body strength), but female-to-male partner abuse is still a major social problem (Straus, 1997; Straus, 2005; Kirkwood, 2003).

Similarly, sexual aggression is not restricted to males sexually assaulting females. While it is true that most sexual aggression is experienced by women at the hands of males, men are also the victims of sexual aggression and unwanted sexual contact (see Struckman-Johnson, 1998, for a review). For instance, Erickson and Rapkin (1991) found that 12% of male high school students had had an unwanted sexual experience, compared to 18% of female students. Similarly, Struckman-Johnson (1988) found that 16% of male college university students reported having been “forced to engage in sexual intercourse while on a date” compared to 22% of female students. Muehlenhard and Cook (1988) found rates of unwanted sex to be higher for the men in their sample than the women: 62% of male university students had engaged in unwanted sexual intercourse, compared to 46% of female students.

Interestingly, men report experiencing sexual aggression at higher rates than women report perpetrating sexual aggression. For instance, Anderson and Aymami (1993) found that 30% of university males had been verbally pressured for sexual contact, but only 11% of women in their sample had used verbal pressure to obtain sexual contact with a man. 45% of males had had women get them drunk or stoned to gain sexual contact, but only 15% of women reported having done so. Similarly, 15% of men reported that women had used physical force to gain sexual contact with them, while only 6% of women reported that they had done so. The reasons for this discrepancy are unclear: Anderson and Aymami suggest potential underreporting by females, overreporting by males, and differing perceptions of sexual situations by females (men always want sex, so initiating sex with a man can never be coercive) but hesitate to prefer any one possibility.

It is clear from research on sexual aggression that most sexual victimisation is

experienced by women at the hands of men, and males are much more likely to use physical force to gain sexual contact. But it is not true that women are never sexually aggressive, or that men are never victims of unwanted sexual attention. Some women do use force to be sexually aggressive; a minority of men rape some women, and a smaller minority of women rape some men. It is not true that “all men are rapists”, a mischaracterisation linked in popular discourse to feminism (Kedgeley, 1985, p. 83).

Clearly, the various psychological mechanisms that link aggression, sex, gender and ideological attitudes such as authoritarianism and social dominance are complex, and there are many underexplored links which could be amenable to further examination. With the research thus far reviewed in mind, two research questions appear important. What is the relationship between RWA, SDO and aggression? If there are any sex differences in the relationship between SDO, RWA and aggression, what is their nature?

It was hypothesised that aggression, and in particular physical aggression, would be positively associated with SDO, consistent with previous research (McFarland & Adelson, 1996). Other evidence includes the observation that Agreeableness is negatively associated with both SDO and aggression. SDO may contain elements of personal dominance, which is related to aggression and physical aggression. Furthermore, the association between aggression (especially physical aggression) and SDO will be greater for men. Males have both higher levels of SDO and higher levels of aggression, particularly physical aggression, therefore we expected any relationship found to be stronger for males.

It was hypothesised that overall aggression as measured by the Aggression

Questionnaire would not be associated with RWA. Although the F-scale is associated with aggression (Ahmed & Lester, 2003), previous research using the RWA scale generally finds no relationship between RWA and aggression (e.g., Lippa & Arad, 1999). On the other hand, several authors describe authoritarian personality as hostile, so it was hypothesised that scores on the hostility subscale of the AQ would be associated with RWA.

It was hypothesised that of the two SDO sub-components, SDO-D would be differentially associated with scores on the aggression subscale. SDO-D is support for group-based dominance, which would be linked to support for the use of interpersonal aggression to dominate others. SDO-E, on the other hand, measures opposition to equality, which was predicted to have no relationship with aggression scores.

Finally, it was hypothesised that the association between SDO-D and aggression (particularly physical aggression) would be larger for men than for women. Males tend to be masculine; Foels and Pappas (2004) found masculinity associated with higher levels of SDO-D; higher levels of masculinity are also associated with increased levels of aggressive behaviour.

Study 1 Method

Sample

Study 1 measured three main sets of variables: Social Dominance Orientation, Right Wing Authoritarianism and aggression. The data for this study was obtained as part of a larger research project into political attitudes.

Participants were 270 residents of the Wellington, New Zealand suburbs of Thorndon and Wadestown and included 114 males and 152 females aged from 18 to 85 (mean age 40, SD 17). 90% of participants identified themselves as New Zealand European and 87% described their nationality as *New Zealander*. The sample reported a variety of occupations including students, retired older people, white-collar workers and public servants. Respondents were recruited by delivering 500 questionnaires into mailboxes in the Thorndon area, and 500 questionnaires into mailboxes in the Wadestown area. Questionnaires were distributed in a non-random convenience sample; each mailbox on a street received a questionnaire, unless the mailbox specified No Circulars. Participation was voluntary and anonymous.

Measures

Three measures were included in the Study 1 questionnaire:

The *Right Wing Authoritarianism Scale* (Altemeyer, 1998) is a 30-item scale consisting of items such as "The real key to the "good life" is obedience, discipline and sticking to the straight and narrow" and "What our country really needs is a strong,

determined leader who will crush evil, and take us back to our true path." Subjects score their agreement or disagreement on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). The RWA scale was found to have a Cronbach's alpha of .92 in the current study.

The *Social Dominance Orientation* (SDO-6) scale (Pratto et al, 1994) is a 16-item scale measuring the intergroup dominance of individuals. The scale consists of items such as "Sometimes other groups must be kept in their place" and "We should do what we can to equalize conditions for different groups" (reverse scored). Subjects score their agreement or disagreement on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). The SDO scale was found to have a Cronbach's alpha of .87 in the current study. The SDO scale has two major factors, Group-based Dominance (SDO-D) and Opposition to Equality (SDO-E) (Jost & Thompson, 1999) each consisting of eight of the original SDO items. SDO-D had a Cronbach's alpha of .84; SDO-E had a Cronbach's alpha of .77.

The *Aggression Questionnaire* (AQ; Buss & Perry, 1992) is a 29-question scale measuring global aggression with four subscales. Physical Aggression (PA), Verbal Aggression (VA), Anger (A) and Hostility (H). These are measured using items such as "I have become so mad that I have broken things." (Physical Aggression), "When people annoy me, I may tell them what I think of them." (Verbal Aggression), "I have trouble controlling my temper." (Anger), and "I am suspicious of overly friendly strangers." (Hostility). Subjects are asked to specify how characteristic each statement is of themselves on a Likert scale from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). The AQ was found to have a Cronbach's alpha of .87 in the current study; subscales were Physical Aggression (.73), Verbal Aggression (.76), Anger (.85) and

Hostility (.73). Note that all scales and subscales exceeded conventional rules of thumb for satisfactory internal reliability.

The printed questionnaire as shown in Appendix 1 featured the scales, ordered as above and followed by several other measures which were included in the questionnaire as part of a larger study. Lastly the questionnaire asked background data questions: sex, age, nationality, ethnicity, marital status, employment, occupation, education, household income and personal income.

Procedure

Prior to data collection, the project was given ethical approval by the School of Psychology Human Ethics Committee – a delegated subcommittee of the Health Research Council. Each respondent received a briefing sheet (which stated the general aims of the study and the anticipated uses of the data, and clearly stated that participation was voluntary and anonymous), the relevant questionnaire, a small form to request a summary of the results and enter a draw to win either \$200 or one of several double movie passes, and a postage-paid envelope to return the questionnaire and form. Via the briefing sheet, participants were asked to fill out the questionnaire and return it in the envelope provided. A six week period was allowed for surveys to be returned; surveys after these six weeks were not included in the study. As the questionnaires were returned, the raw data was entered and coded for data analysis.

Study 1 Results

Statistical analysis was carried out on the data using SPSS 12.0 for Windows. An alpha level of 5% was used for all statistical tests in this study.

Table 1

Means and Standard Deviations for all scales

| | Overall Mean | Male Mean | Female Mean | Male-Female |
|---------------------------|----------------------|----------------------|----------------------|--------------------|
| | (and SD) | (and SD) | (and SD) | Difference |
| | (n's 250-270) | (n's 105-114) | (n's 142-152) | (t-value) |
| RWA | 2.63 (0.93) | 2.76 (0.95) | 2.51 (0.90) | -2.25* |
| SDO-6 | 2.58 (0.99) | 2.77 (1.02) | 2.45 (0.96) | -2.48* |
| SDO-D | 2.45 (1.10) | 2.74 (1.19) | 2.23 (0.97) | 2.59** |
| SDO-E | 2.69 (1.12) | 2.76 (1.11) | 2.64 (1.13) | 3.41** |
| Anger | 2.10 (0.74) | 2.07 (0.73) | 2.14 (0.74) | -0.79 |
| Physical | 1.75 (0.58) | 1.93 (0.60) | 1.62 (0.53) | -4.44** |
| Aggression | | | | |
| Hostility | 2.21 (0.67) | 2.30 (0.69) | 2.14 (0.65) | -1.89 |
| Verbal Aggression | 2.82 (0.82) | 2.94 (0.84) | 2.72 (0.80) | -2.13* |
| Overall Aggression | 2.15 (0.50) | 2.24 (0.51) | 2.08 (0.48) | -2.58* |
| Age | 40.6 (17.5) | 43.1 (18.1) | 38.7 (16.8) | 3.41** |

* = $p < .05$, ** = $p < .01$.

Table 1 shows the means and standard deviations for all scales. These results are broadly similar to previous research on general population samples for SDO (e.g., Pratto et al, 1994), RWA (e.g., Heaven & Bucci, 2001; Altemeyer, 1998), and aggression (e.g., Tremblay & Ewart, 2004). Gender means reflect previous findings of greater male SDO (e.g. Sidanius, 1992; Sidanius, Pratto & Bobo, 1994; Pratto & Stallworth, 1997), greater male aggression and in particular a significant sex difference in physical aggression (as found by Buss & Perry, 1991). On the other hand, the significant difference between male

and female RWA scores (with males higher) differs from most previous research, which finds no difference (e.g., Altemeyer, 1998; Crowson, Debacker & Thoma, 2005; Guastello & Peissig, 1998; Heaven & Quintin, 2003).

Table 2*Correlations between Scales and Subscales*

| | SDO-6 | RWA | SDO-D | SDO-E | OA | PA | VA | A | H | Age |
|----------------------------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-----|
| SDO-6 | - | | | | | | | | | |
| RWA | .54** | - | | | | | | | | |
| SDO-D | .89** | .57** | - | | | | | | | |
| SDO-E | .89** | .38** | .59** | - | | | | | | |
| Overall Aggression | .19* | .15* | .24** | .10 | - | | | | | |
| Physical Aggression | .22** | .14* | .24** | .15* | .73** | - | | | | |
| Verbal Aggression | .00 | -.01 | .05 | -.04 | .70** | .36** | - | | | |
| Anger | .10 | .08 | .13* | .06 | .80** | .49** | .51** | - | | |
| Hostility | .19** | .18** | .25** | .10 | .66** | .25** | .28** | .32** | - | |
| Age | .06 | .22** | .02 | .09 | -.23** | -.15* | -.20** | -.12 | -.21** | - |

* = $p < .05$, ** = $p < .01$.

Table 2 shows correlations between scales and subscales for the overall sample. There is a strongly positive significant relationship between SDO and RWA, broadly consistent with previous research findings that SDO and RWA are often significantly correlated (Altemeyer 1998; Roccato & Ricolfi, 2005), but also of a greater magnitude than typically reported. SDO is also significantly related to overall aggression, hostility and physical aggression, as predicted.

SDO-D is related to overall aggression, physical aggression and anger, while SDO-E is unrelated to the aggression subscales, except for a small correlation with physical aggression. This is consistent with the prediction that SDO-D would be differentially associated with aggression compared to SDO-E. SDO-D and SDO-E are moderately correlated, suggesting they measure overlapping but not identical portions of the SDO construct (as per Jost & Thompson, 2000).

RWA is also significantly related to overall aggression and physical aggression, which does not support the hypothesis that RWA would be unrelated to overall aggression. On the other hand, RWA is related to hostility, as predicted. Age is related to increased RWA scores, and lower scores on the aggression subscales, with the exception of anger.

Table 3 shows the Aggression Questionnaire overall score and subscales correlated with SDO, RWA, SDO-E and SDO-D by sex. SDO is significantly related to overall aggression and especially physical aggression for females, but unrelated to aggression for males. This unexpected sex difference does not support the hypothesis that males would

have a larger SDO-aggression relationship. RWA is significantly correlated with overall aggression, hostility and anger for males, but not for females.

Table 3

Correlations between scales and subscales, with SDO, SDO-D, SDO-E and RWA, by sex.

| | SDO-6 | | RWA | | SDO-D | | SDO-E | |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Male | Fem | Male | Fem | Male | Fem | Male | Fem |
| SDO-6 | - | - | - | - | - | - | - | - |
| RWA | .49** | .57** | - | - | - | - | - | - |
| SDO-D | .90** | .89** | .48** | .63** | - | - | - | - |
| SDO-E | .88** | .92** | .38** | .39** | .57** | .63** | - | - |
| Overall A. | .13 | .20* | .20* | .06 | .19* | .24** | .04 | .14 |
| Physical A. | .08 | .27** | .09 | .14 | .14 | .26** | .01 | .25** |
| Verbal A. | -.02 | .00 | .02 | -.09 | -.01 | .05 | -.05 | .02 |
| Anger | .14 | .08 | .24* | -.02 | .16 | .13 | .11 | .02 |
| Hostility | .16 | .20* | .21* | .12 | .25* | .22** | .03 | .15† |
| Age | .13 | -.04 | .21* | .21* | .01 | -.05 | .23* | -.02 |

† = $p < .10$, * = $p < .05$, ** = $p < .01$

SDO-D is associated with overall aggression and hostility for both males and females, and associated with physical aggression for females only. SDO-E is unrelated to the AQ subscales except for a correlation with physical aggression scores for females only.

Age is associated with increased RWA scores and lower overall aggression and verbal aggression scores for both males and females. For males, age is related to lower physical aggression scores, whereas for females, age is related to lower anger and hostility scores.

Table 4*Correlations between Aggression Questionnaire subscales and age, by sex.*

| | Overall Agg. | | Physical Agg. | | Verbal Agg. | | Anger | | Hostility | |
|--------------|--------------|--------|---------------|-------|-------------|--------|-------|-------|-----------|--------|
| | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem |
| OA. | - | - | | | | | | | | |
| PA. | .76** | .71** | - | - | | | | | | |
| VA. | .69** | .71** | .36** | .35** | - | - | | | | |
| Ang | .79** | .85** | .53** | .51** | .43** | .61** | - | - | | |
| Host. | .25* | .63** | .29** | .20* | .35** | .19* | .33** | .35** | - | - |
| Age | -.21* | -.30** | -.24* | -.15 | -.22* | -.22** | -.03 | -.18* | -.13 | -.31** |

† = $p < .10$, * = $p < .05$, ** = $p < .01$

Table 4 shows the correlations between the AQ subscales and age. This demonstrates that while the AQ subscales each measure a different aspect of aggression, they also overlap and intercorrelate to form a coherent overall measure of aggression. In addition, with increasing age, self-reported aggression generally decreases, with the exception of anger for males.

Regressions

Multiple regression analysis was used to determine the predictors of the Aggression Questionnaire subscales. The variables included in the analyses were RWA, SDO-D, SDO-E and sex. The SDO-6 score is left out of these analyses as SDO-D and SDO-E are together equivalent to SDO-6.

Table 5*Multiple Regression Analysis for Physical Aggression*

| | | Unstandardised | Standardised | Adjusted | |
|---------------|----------|----------------|--------------|----------------|--------------|
| | | B (SE) | β | R ² | ΔR^2 |
| <i>Step 1</i> | | | | | |
| | Constant | 1.35 (0.11) | | | |
| | Sex | 0.29 (0.07) | .25 | .06 | .06*** |
| <i>Step 2</i> | | | | | |
| | Constant | 1.18 (0.12) | | | |
| | Sex | 0.24 (0.07) | .21 | | |
| | SDO-D | 0.10 (0.03) | .18 | .09 | .03** |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): SDO-E, RWA. All betas in this regression were significant.

In this significant regression ($F(2, 242) = 12.30, p < .0001$) shown in Table 5, both sex and SDO-D are significant predictors of physical aggression scores. Sex accounts for approximately 6% of the variance in Physical Aggression scores, and the SDO-D component of SDO accounts for another 3%. This is consistent with observations of a consistent sex difference in physical aggression scores (Buss & Perry, 1992) and the previous correlation of SDO with physical aggression. Note that SDO-D explains variance in physical aggression even after sex is taken into account. SDO-E did not predict any variance in physical aggression scores. This is consistent with the prediction that the SDO-D component of SDO would be preferentially associated with aggression, compared to SDO-E.

Table 6*Multiple Regression Analysis for Hostility*

| | Unstandardised | Standardised | Adjusted | |
|---------------|----------------|--------------|----------------|--------------|
| | B (SE) | β | R ² | ΔR^2 |
| <i>Step 1</i> | | | | |
| Constant | 1.83 (0.10) | | | |
| SDO-D | 0.16 (0.04) | .25 | .06 | .06*** |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): SDO-E, RWA, sex. All betas in this regression were significant.

Table 6 shows a significant regression ($F(1, 243) = 16.60, p < .0001$) which suggests that the SDO-D component of SDO is a significant predictor of hostility scores, explaining about 6% of the variability in hostility. Although RWA was correlated with hostility, it is not a significant predictor in this analysis; this conflicts with the prediction that RWA would be associated with hostility. Perhaps the effect of RWA on hostility is due to the correlation of SDO and RWA.

Table 7*Multiple Regression Analysis for Overall Aggression*

| | Unstandardised | Standardised | Adjusted | |
|---------------|----------------|--------------|----------------|--------------|
| | B (SE) | β | R ² | ΔR^2 |
| <i>Step 1</i> | | | | |
| Constant | 1.89 (0.08) | | | |
| SDO-D | 0.11 (0.03) | .23 | .05 | .05*** |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): SDO-E, RWA, sex. All betas in this regression were significant.

Table 7 shows a significant regression analysis ($F(1, 243) = 13.74, p < .0001$) showing that the SDO-D component of SDO explains about 5% of the variability in Overall Aggression scores, while RWA and sex explain little or no variance in overall aggression scores. SDO-E did not predict any variance in overall aggression scores. This is consistent with the prediction that the SDO-D component of SDO would be preferentially associated with aggression, compared to SDO-E.

Regression analyses for Verbal Aggression and Anger showed that none of the variables (SDO-D, SDO-E, RWA and sex) were significant predictors; thus, these analyses were omitted.

Path Analysis

Path analysis is an extension of multiple regression analysis which allows researchers to test models of the relationships between variables, based on the correlations (or covariances, where appropriate) between the variables assessed. From previous regression analyses we conclude that only some variables have a significant effect on the relationship between SDO, RWA and the aggression subscales. The relationships between these variables was predicted, then tested using path analysis.

The variables we will consider are: sex, SDO, RWA, hostility, anger, and physical aggression. There is a significant sex difference in scores on SDO and physical aggression, so we expect that sex will explain some of the variability of both SDO and Physical Aggression. High-SDO individuals tend to be personally dominating (Altemeyer, 1998), and, it is speculated, could use physical aggression to exert their dominance, so we expect SDO to be related to physical aggression, as per Lippa and Arad (1999). SDO beliefs tend to lead to RWA beliefs, but this relationship is not reciprocal (Duckitt, 2001) so we expect SDO to explain some of the variance of RWA (but not vice versa). Authoritarians tend to have hostile attitudes (Duckitt, 2001, Ahmed and Lester 2003) so RWA will be related to hostility.

According to models by Buss and Perry (1992), hostility is a *cognitive* form of aggression, anger is an *emotional* form of aggression, and physical aggression is a *behavioural* form. In their model, cognitions produce emotions, which in turn produce behaviours. We expect hostility will explain some of the variation in physical aggression, completely mediated by anger.

These predictions are summarised as seen in Figure 1.

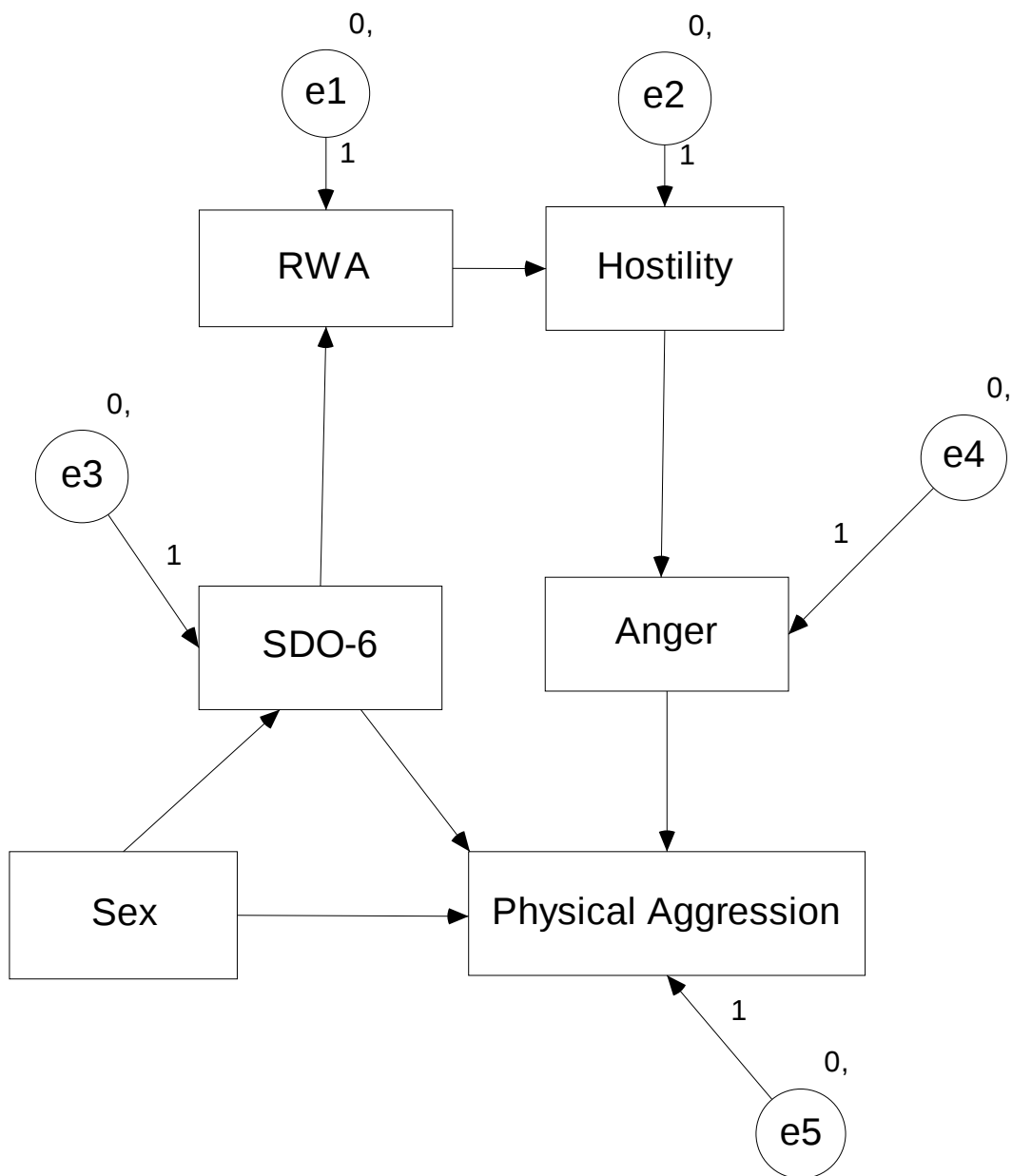


Figure 1

A path analysis model of the expected relationships between SDO, RWA, sex, anger, hostility and physical aggression.

In assessing the overall model fit, Hu and Bentler (1999, cited in Duckitt, 2001) suggest values close to or better than 0.06 for RMSEA and 0.95 for CFI and GFI.

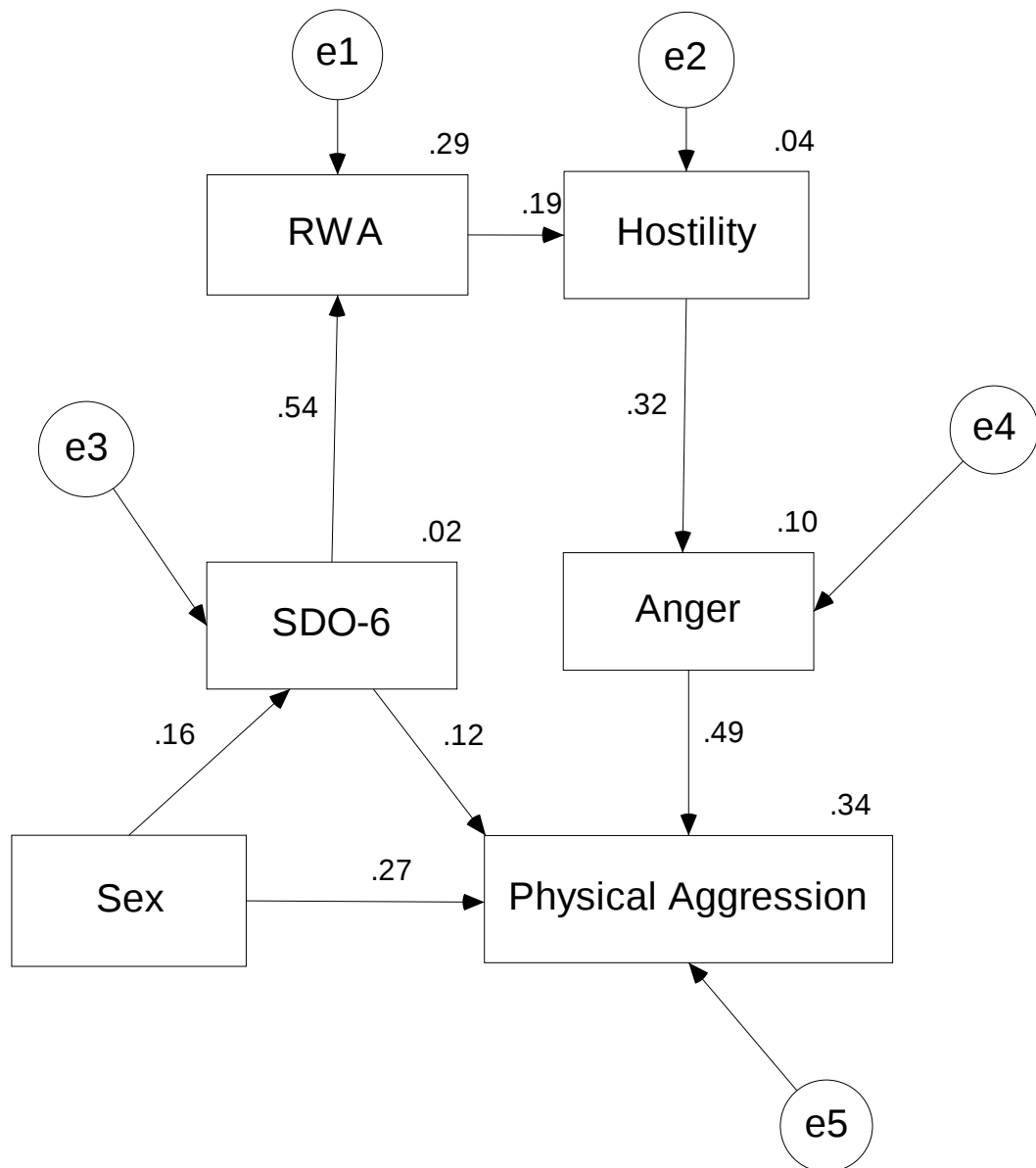


Figure 2

A standardised path analysis of the model presented in Figure 1.

The results of the path analysis supports the predicted model; chi-square (8) = 8.9, chi-square/df ratio = 1.11. Model fit is excellent with values of 0.02 for RMSEA, 0.996 for CFI and 0.994 for GFI. As seen in Figure 2, SDO is related to RWA, which in turn is related to anger, and in turn anger acts as a mediator between hostility and physical aggression. Sex has a direct effect on SDO and physical aggression.

Study 1 Discussion

The results of Study 1 show that RWA is positively, significantly correlated with aggression, which was not predicted by hypotheses based on previous research (e.g., McFarland & Adelson, 1996; Lippa & Arad, 1999). However, this finding is supported by some previous research into authoritarianism and aggression (Walker, Rowe & Quinsey, 1993; Ahmed & Lester, 2003). If RWA is associated with hostility, these findings support research by Duckitt (2001) in relation to the dangerous-world hypothesis. Physical aggression was also associated with RWA.

SDO was found to be correlated with aggression, particularly physical aggression, as predicted. This confirms predictions from research in personality (Tremblay & Ewart, 2004; Heaven & Bucci, 2001) and speculation concerning testosterone, aggression and Social Dominance Orientation (Sidanius, 1992). These results could be seen as support for Altemeyer's (1998) construal of SDO as including elements of personal dominance.

The hypothesis that SDO-D would be more associated with aggression than SDO-E was supported; however, the prediction that SDO-D would be more highly correlated with aggression for males was not supported. SDO-D was equally correlated with overall aggression for males and females, and more highly correlated with physical aggression for females than males. This is essentially the opposite of what was predicted. The prediction that males would show a stronger association between physical aggression and SDO was not supported. Females were found to have a significant correlation between SDO and physical aggression, while males did not. This warrants close examination.

One potential explanation for this finding is that males, being more physically aggressive than females (Buss & Perry, 1992), have large factors affecting aggression which could swamp any SDO-physical aggression effect. For instance, fluctuations in testosterone might be an important factor in determining levels of physical aggression in males (Sidanius, 1992), whereas females do not have such large or fluctuating levels of testosterone (Josephs et al, 2006). Thus, their link between SDO and physical aggression might be more easily observed. However, the current study did not measure testosterone levels.

Another possible reason for the female SDO-physical aggression link is the different patterns of socialisation between males and females as described by Campbell (1993). For males, physical aggression is more widely used and socially supported in certain contexts (sports, “fair fights”, military conflict, and so on). If it is socially acceptable for all males to be physically aggressive, their levels of physical aggression might tend to be uniform and not differ in terms of SDO. On the other hand, with the modern feminist message that female use of force in self-defence is appropriate, high-SDO and high-RWA women might more readily use aggression to defend themselves when they feel threatened or provoked (with their perception of the 'dangerous world'). Women with lower SDO may not feel as threatened and so use physical aggression less.

Study 1 was a relatively simple investigation of the relationship between sex, RWA, SDO and Aggression, which leads to limitations in possible conclusions. Measures of personality, testosterone and masculinity/femininity were not included, so any conclusion

about the relevance of these factors in explaining the results of the study are uncertain, though other research has suggested that they may be important (Wilson & Liu, 2003; Sidanius, 1992). The measure of aggression used was broad-based and did not distinguish between different types of aggression, for instance expressive versus instrumental (Campbell, 1993), and justified versus unjustified aggression. Some of these shortcomings will be addressed in Study 2.

In summary, there were multiple significant relationships found between SDO, RWA and aggression, some of which were predicted, while others were unanticipated; in particular, aggression was related to RWA. In terms of sex, female aggression was related to SDO and male aggression was related to RWA. Both SDO and aggression have simple and well-studied gender differences; RWA exhibits no consistent gender difference. There was, however, a pattern of sex differences in the interaction of these variables which clearly invites further investigation.

Study 2 Introduction

Gender and Social Dominance Theory

Social Dominance Theory (and the central importance given to the use of the SDO construct) is essentially an attempt to explain power relations and group identification in human societies (Sidanius, 1992). They are not the only potential explanations, and there are competing theories about group power relations, the foremost competitor to SDT being Social Identity Theory (SIT; Tajfel & Turner, 1979). SIT suggests that individuals feel psychological identification with the groups they belong to, and that this identification forms an important part of individual's social identity. Individuals seek to increase their self esteem by identifying with groups which make them feel good about themselves. Members of minority groups are thought to engage in a range of strategies to improve their self-esteem via social identity, including changing groups (if possible), seeking to change the way their group is viewed, or changing the domain of comparison between groups so that the comparison enhances the status of their group. For instance, the domain of comparison could be changed from *competence* to *warmth* ('we may not be rich, but we're very friendly').

Research finding sex differences in socio-political attitudes is common, with the basic finding being that women are more politically liberal than men (e.g., Sidanius & Ekehammer, 1980). A brief review by Wilson and Liu (2003) lists prejudice, authoritarianism, punitive attitudes and acceptance of international conflict as measures in which men generally score higher than women, although it must be noted that much research reporting sex differences in right wing authoritarianism finds no sex difference

(e.g., Crowson, Debacker & Thoma, 2005, Guastello & Peissig, 1998, Heaven & Quintin, 2003), although a few have reported higher male scores (Duncan, Peterson & Winter, 1997) or even higher female scores, albeit non-significant (Whitley & Ægisdóttir, 2000). Social Dominance Theory suggests that the increased tendency of men to accept social inequality is an evolved sociobiological adaptation and predicts that the tendency of males to have higher SDO scores will be essentially invariant, and persist regardless of covariates such as socio-economic status, race and culture (Pratto *et al*, 1997); this is the *invariance hypothesis*.

Tests of the invariance hypothesis (e.g., Wilson & Liu, 2003) are one way to compare the predictions of SDT and SIT. Data supporting the invariance hypothesis support, in turn, SDT; data failing to support the invariance hypothesis suggest SIT may be a more appropriate theory for explaining these phenomena. Dambrun, Duarte and Guimond (2004) challenge the invariance hypothesis by testing the predictions of Social Dominance Theory against those of Social Identity Theory. A structural equation modeling approach showed that gender identification completely mediated the effect of gender on social dominance orientation. This suggests that Social Dominance Orientation has a socially constructed origin consistent with SIT rather than being biologically determined as proposed by SDT.

Another challenge to Social Dominance Theory was presented by Schmitt, Branscombe and Kappen (2003). Their most interesting test was a manipulation in which men and women were asked to consider a situation of inequality which favoured women. Female participants were more comfortable with this inequality than male participants. This suggests that support for inequality is not a solely male attitude (as predicted by

SDT), but more globally exhibited by whoever is the dominant group – in this case, exhibited by women who perceived that their social group would benefit (as predicted by SIT). Similar arguments have been made by Wilson and Liu (2003) and Foels and Pappas (2004), who challenged the invariance hypothesis by showing that psychological gender (masculinity and femininity) and gender identity moderate the sex difference in SDO. Gender identity is the “extent to which people identify with their gender group” (Wilson & Liu, 2003, p 188) and has been found to be a moderating factor for the sex difference in SDO scores. Foels and Pappas (2004), in an extension of this challenge, found that the sex difference in SDO is mediated by gender socialisation, and furthermore found that masculinity and femininity are differentially related to the SDO-D and SDO-E components of SDO.

Based on these studies, one can make the argument that SDO is not universal, as postulated by SDT, but situational as suggested by SIT. The question, then, is whether the high-SDO prejudiced individual really exists. Given the breadth of research and the strength of the link between prejudice and SDO (e.g., McFarland & Adelson, 1996; Sibley, Robertson & Wilson, 2006), SDO is certainly measuring some aspect which predicts prejudice. Thus SDT may be significantly weakened but SDO as an instrument for measuring the prejudiced personality may still be a viable tool. This is important for this study because it shows that the differing perceptions of social inequality by men and women are important in their support for inequality. Differences in the perception of the use of aggression, then, must surely be important in considering the relationship between SDO and aggression.

Campbell (1993), working with data gathered during the 1970s, describes a pervasive global sex difference in aggression such that males tend to use aggression according to social scripts in instrumental ways to gain status, to defend themselves, and to exert dominance over others. Women, on the other hand, may be socialised to repress their aggressive impulses, and tend to act aggressively only when they are angry or frustrated and are no longer able to contain their aggression. Campbell (1993) expresses this neatly by portraying men as using aggression to take control, whereas women are aggressive when they lose control. Men tend to use aggression instrumentally, while women tend to be use aggression expressively.

Archer and Haigh (1997) developed a scale to measure instrumental versus expressive beliefs about aggression (the EXPAGG scale), and found a clear sex difference whereby men score higher on the instrumental subscale, and women score higher on the expressive subscale. When asked whether they were thinking of a same-sex or opposite-sex opponent when answering the questionnaire, male participants were most likely to be thinking of a male opponent, whereas female participants were equally likely to be thinking of a female opponent or a male opponent (who was usually a partner). A second study supported the hypothesis that instrumental beliefs about aggression predicted higher levels of physical aggression, whereas expressive beliefs about aggression were negatively associated with physical aggression (Archer & Haigh, 1997).

In considering sex differences in aggression, one must be careful not to exaggerate the differences; men and women are not complete opposites in their use of aggression.

Women are less physically aggressive than men, but report similar levels of verbal aggression, hostility and anger (e.g., Buss & Perry, 1992). Dill et al (1997) found that men and women had identical expectations and perceptions of hostility, suggesting that the origin of aggression in both men and women is identical. Women are observed using physical aggression against other women (Campbell, 1986) and individual women are capable of aggressive acts on a par with the worst of male aggression (Kirsta, 1994). Domestic violence has been presented as purely a men-striking-women problem (see Gelles, 2007, for a review; Hamberg & Renzetti, 1994; Straus & Gelles, 1990), but some research reports that women hit men as often as the reverse (Straus & Ramirez, 2004), and start the physical altercation as often as their male partner (Straus, 2005). It has been argued that men use violence in relationships to control women, while women use violence to express their anger (for instance, Campbell, 1993); but domestic violence research using gender-neutral measures of violence suggests that women used violence in an attempt to control their partner's behaviour as often as men did (Straus, 1997). Even in areas such as sexual aggression, research has demonstrated that some women use coercion to obtain sexual contact. For instance, a German study found that 10% of women had used drugs or alcohol, verbal aggression or physical aggression to get sex (Krahe, Waizenhofer & Moller, 2003). Similarly, Erickson and Rapkin (1991) reported 12% of male high school students in their sample had had an unwanted sexual experience, compared to 18% of female students.

Has the socialisation of women to reject aggressive behaviour changed in recent decades? The influence of feminism on Western society is clear (Hopkins, 2002) and it has been argued that women are no longer socialised to reject aggression, for example, "To behave aggressively is no longer considered unfeminine and unattractive" (Hopkins, 2002,

p 109). Anderson and Aymami (1993) describe modern female adoption of more masculine roles, with associated additional social, economic and political power. They speculate that women will encounter more situations that encourage aggression, including sexual aggression. Some popular media now promote the concept of 'girl power'. For example, modern portrayals of women in media such as the movie *Charlie's Angels*, and television shows like *Xena: Warrior Princess* and *Buffy the Vampire Slayer* (Hopkins, 2002), all feature strong heroines who excel at using physical aggression in socially acceptable ways (to defend themselves and innocents). Hopkins writes "... action girls have taken on a masculine alliance with violence. They kick, punch, and stab their adversaries – usually with good reason" (p. 111). A study of strong female protagonists in film, *Reel Knockouts*, provides examples of increasing representations of female physical empowerment in film: "In the 1990s women have increasingly been represented as violent protagonists" (p. 219, Tina Vares) and "The last decade has seen the emergence of a new breed of powerful women in film" (p. 78, Carol M Dole). Hopkins (2002) describes the rise of the strong heroine in popular culture, stating that it is now a "dominant theme" (p. 1). With new, powerful female role models, the use of physical aggression - especially in self defence - may increasingly be seen as socially acceptable by, and for, some women.

An exception to modern changing views of female aggression might be right-wing authoritarian women. Traditionalism and conventionalism are important parts of RWA (Altemeyer, 1984), so high-RWA scorers might exaggerate sex differences in aggression. For example, female RWAs might proclaim themselves to be (femininely) low on aggression, particularly physical aggression, and male RWAs might proclaim themselves to be masculinely high on aggression, especially physical aggression. So although there is little or no sex difference in RWA scores, RWA beliefs could potentially increase self-

reported sex differences in aggression due to the effect of traditionalism.

The relationship of aggression with gender-based discrimination can be examined through use of the Attitudes to Women scale (Spence & Helmreich, 1978).

Authoritarianism and Social Dominance Orientation are known to be strongly correlated with prejudice including sexism (McFarland & Adelson, 1996). Sexism may in turn be related to aggression; sexual harassment has been described as part of the same continuum as violent sexual aggression and rape (Begany & Milburn, 2002). Surprisingly, there has been little research on sexism and aggression, although some studies have examined sexism and attitudes towards partners, including aggression. For instance, Ryan and Kanjorsky (1998) assessed sexist attitudes via participants' rated enjoyment of sexist jokes, and found that sexism in males was associated with acceptance of rape myths, an increased self-reported likelihood of forcing sex, and increased psychological, sexual and physical aggression towards intimate partners. Women who enjoyed the sexist jokes did not show aggressive tendencies.

Given that SDO and RWA are group-level constructs which are perceived to measure an individual's preferences about the structure of society, it may be revealing to ask about individual preferences relating to the use of aggression in societal settings. An excellent example is the 2007 New Zealand debate surrounding the repeal of Section 59 of the Crimes Act, also called the "Anti-Smacking Bill" which was intended to reduce child abuse; several groups protested the bill because it appeared to make it illegal to use any force in smacking children ("Destiny loses," 2007). With these and similar issues in mind, the 'Aggression in Society' (AiS) scale was created for the purposes of this study to measure various attitudes about the use of aggression in societal settings. For instance,

questions asked the extent to which participants supported the use of corporal punishment in schools, or the prosecution of sports players for assaults committed during sports games.

With this research in mind, certain research questions appear important. Primarily, we seek to explain: why might there be sex differences in the relationship between SDO and aggression?

It may be the case (as suggested by Hopkins, 2002, above) that high SDO females are more likely to absorb and espouse 'girl power' beliefs; these beliefs might then lead to them being less opposed to aggression. On the other hand, it may be that male SDO is not linked to physical aggression, firstly because physical aggression is least likely to be used by those males in high status (high SDO) positions, and secondly, all males are socially conditioned to consider physical aggression acceptable. Thus, both high and low SDO males would tend to use physical aggression at a similar frequency.

High RWA men may exhibit higher levels of hostility because they perceive the world to be a hostile place ('dangerous world' hypothesis). High RWA women, valuing traditionalism, might absorb and use traditional female scripts which include the belief that women should generally be non-aggressive.

Are the sex differences in the relationship of SDO and RWA with aggression reflected in the different types of aggression, such as instrumental versus expressive? Is the link between SDO/RWA and aggression related to sexist attitudes towards women? Intuitively, female SDO – physical aggression and female RWA – low hostility links might be related to their attitudes towards traditional female sex-roles. From these questions, and

with previous research in mind, some hypotheses for Study 2 were formed.

It was hypothesised that males would have higher levels of instrumental aggression, and that females would have higher levels of expressive aggression, as per Archer and Haigh (1997). It was hypothesised that instrumental aggression would be associated with higher levels of SDO. SDO individuals are described as using aggression for personal dominance (Altemeyer), implying an instrumental use of aggression. It was hypothesised that RWA males would display higher levels of masculinity because RWA males, being traditional and conservative, would tend to embrace a conventionally masculine self-image. Finally, it was predicted that RWA and SDO males would have higher levels of anti-women beliefs (as compared to RWA and SDO females); both SDO and RWA males should tend to be sexist and espouse anti-women beliefs (Altemeyer, 1998; McFarland & Adelson, 1996).

Study 2 Method

Sample

Study 2 measured eight broad groups of variables: Social Dominance Orientation, Right Wing Authoritarianism, aggression, instrumental-expressive beliefs about aggression, gender group identification, masculinity/femininity, attitudes to Aggression in Society (AiS) and attitudes towards women.

Participants were 180 residents of the Wellington suburbs of Lyall Bay, Wilton and Northland. Respondents included 64 males and 113 females, who were aged from 17 to 85 (mean age 41, SD 14). 82% of participants identified themselves as New Zealand European and 81% described their nationality as *New Zealander*. Respondents were recruited by delivering 476 questionnaires into mailboxes in the Lyall Bay area, and 494 questionnaires into mailboxes in the Wilton-Northland area. Questionnaires were distributed in a non-random convenience sample; each mailbox on a street received a questionnaire, unless the mailbox specified No Circulars. Participation in the study was voluntary and anonymous.

Measures

The *Right Wing Authoritarian* scale (RWA; Altemeyer, 1998) was administered using the same rating scale as in Study 1, and had a Cronbach's alpha of .94.

The *Social Dominance Orientation* scale (SDO-6; Pratto et al, 1994) was administered using the same rating scale as in Study 1, and had a Cronbach's alpha of .87. SDO-D had a Cronbach's alpha of .82; SDO-E had a Cronbach's alpha of .78.

The *Aggression Questionnaire* scale (Buss & Perry, 1992), rated in the same fashion as Study 1, had a Cronbach's alpha of .89. The AQ subscale Cronbach alphas were: Physical Aggression .82, Verbal Aggression .68, Hostility .80, Anger .79.

The *EXPAGG* scale (Archer and Haigh, 1997) is a 16-item scale designed to measure participants' beliefs about aggression. It is divided into two subscales, with 8 of the items being *instrumental* in nature (aggression is used to gain control over others) and 8 items being *expressive* (aggression comes from losing control over one's own emotions). Participants rate their agreement or disagreement with the scales on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Example items include “I believe my aggression comes from losing my self-control” (expressive) and “The best thing about physical aggression is it makes the other person get in line” (instrumental). The Cronbach's alpha for the Instrumental subscale, was .77; for the Expressive subscale, .64. The reliability of the Expressive scale is somewhat lower than generally accepted, and lower than found in previous research (e.g. Archer & Haigh, 1997).

The *Aggression in Society* (AiS) scale is a nine-item scale constructed for the purposes of this study to measure participants' attitudes to the acceptability of aggression in society. Example questions include “Schools should have the right to physically discipline

disobedient students” (agreement indicating a pro-societal-aggression attitude) and “Police should prosecute sports people who are violent on the sports field” (agreement indicating an anti-societal-aggression attitude). The AiS scale has a Cronbach's alpha of .69.

The *Personal Attributes Questionnaire* (PAQ) (Spence & Helmreich, 1978) is a 24-item scale designed to measure masculinity and femininity. The scale consists of pairs of opposing characteristics, such as 'Not at all artistic' and 'Very artistic'. Participants mark their endorsement of one or the other characteristic by marking a letter from A to E, effectively forming a five-point Likert scale between the characteristics. The PAQ consists of three subscales, which use different item pairs to measure feminine traits, masculine traits, or contrasting masculine and feminine traits (the Bipolar scale). Example pairs include 'Not at all helpful to others' - 'Very helpful to others' (feminine), 'Not at all competitive' – 'Very competitive' (masculine) and 'Very little need for security' - 'Very strong need for security' (masculine-feminine). The PAQ-Bipolar has a Cronbach's alpha of .51; PAQ-Masculinity .55 and PAQ-Femininity .72. The reliabilities for PAQ-Bipolar and PAQ-Masculinity are low; Shifren and Bauserman (1996) also found a low Cronbach's alpha of .51 for the Masculinity scale of the PAQ and refer to an unpublished manuscript (Shifren, Furnham & Bauserman, 1996, cited in Shifren & Bauserman, 1996) which found a similarly low Cronbach's alpha of .51 and .53 for Masculinity in two samples. In that study, removing item 16 (decision-making) improved the Cronbach's alpha to around .70. Shifren and Bauserman (1996) opted to leave item 16 of the PAQ in their analyses, despite its effect on reliability, so that their results remained comparable to previous research.

The *Gender Group Identification* scale (Wilson and Liu, 2003) is a five-item scale designed to measure the extent to which males and females identify with either males or

females in various areas. The scale starts with “Which gender group do you identify most strongly with?” and presents a 7-point Likert scale with Women anchored to 1 and Men anchored to 7. Four similar questions follow to assess gender identification on content of friendships, life experiences, attitudes and priorities in life, using items such as “In terms of your life experiences, which group do you feel closest to?” The Gender Scale had a Cronbach's alpha of .91.

The *Attitudes to Women* scale (Spence & Helmreich, 1978) is a 15-question scale consisting of statements about the role of women in society such as “The intellectual leadership of a community should be largely in the hands of men” and “Women should assume their rightful place in business and all the professions along with men” (a reversed-score item). Participants rate each statement on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). The Attitudes to Women scale had a Cronbach's alpha of .84.

The questionnaire scales were ordered as seen in Appendix 2: RWA, SDO-6, EXPAGG, AiS, AQ, PAQ, Gender Scale, Attitudes To Women Scale, and lastly general background data: sex, age, nationality, ethnicity, marital status, employment, occupation, education, household income and personal income.

Procedure

Prior to data collection, the project was given ethical approval by the School of Psychology Human Ethics Committee – a delegated subcommittee of the Health Research Council. Each respondent received a briefing sheet, the relevant questionnaire, a small

form to request a summary of the results and enter a draw to win either \$200 or one of several double movie passes, and a postage-paid envelope to return the questionnaire and form. Via the briefing sheet, participants were asked to fill out the questionnaire and return it in the envelope provided.

A six week period was allowed for surveys to be returned; surveys after these six weeks were not included in the study. As the questionnaires were returned, the raw data was entered and coded for data analysis.

Study 2 Results

Statistical analysis was carried out on the data using SPSS for Windows. An alpha level of 5% was used for all statistical tests in this study.

Table 8

Means and standard deviations for all scales

| | Overall Mean (and SD) | Male Mean (and SD) | Female Mean (and SD) | Male-Female Difference |
|------------------------------|----------------------------------|-------------------------------|---------------------------------|-----------------------------------|
| | (n's 168-178) | (n's 56-64) | (n's 103-113) | (t-value) |
| RWA | 2.74 (1.00) | 3.01 (1.21) | 2.57 (0.82) | 2.59** |
| SDO-6 | 4.88 (0.89) | 2.77 (0.86) | 2.30 (0.87) | 3.41** |
| SDO-D | 2.49 (1.97) | 2.91 (1.12) | 2.25 (0.98) | 2.56** |
| SDO-E | 2.42 (0.93) | 2.63 (0.89) | 2.32 (0.95) | 3.41** |
| Anger | 2.19 (0.76) | 2.13 (0.80) | 2.23 (0.74) | -0.75 |
| Physical Aggression | 1.86 (0.76) | 2.01 (0.72) | 1.79 (0.77) | 1.88+ |
| Hostility | 2.44 (0.73) | 2.46 (0.68) | 2.43 (0.77) | 0.29 |
| Verbal Aggression | 2.75 (0.73) | 2.81 (0.68) | 2.72 (0.75) | 0.79 |
| Overall Aggression | 2.26 (0.55) | 2.30 (0.54) | 2.23 (0.56) | 0.81 |
| Instrumental Agg. | 1.96 (0.73) | 2.28 (0.72) | 1.78 (0.68) | 4.42** |
| Expressive Agg. | 3.16 (0.75) | 3.09 (0.77) | 3.21 (0.74) | -0.98 |
| PAQ-Bipolar | 2.78 (0.48) | 2.97 (0.42) | 2.67 (0.48) | 4.15** |
| PAQ-Masculinity | 3.62 (0.63) | 3.63 (0.49) | 3.62 (0.70) | 0.11 |
| PAQ-Feminism | 3.89 (0.47) | 3.72 (0.45) | 3.99 (0.45) | 3.76** |
| Attitudes to Women | 2.06 (0.84) | 2.47 (0.98) | 1.82 (0.64) | 4.75** |
| Gender Identity | 3.46 (1.51) | 4.88 (1.16) | 2.67 (1.01) | 12.67** |
| Aggression in Society | 2.71 (0.74) | 3.01 (0.72) | 2.55 (0.70) | 2.59** |
| Age | 41.0 (14.2) | 44.2 (16.9) | 39.1 (12.1) | 3.41** |

$t = p < .10$, $* = p < .05$, $** = p < .01$.

Means

Table 8 shows the means and standard deviations for male and female participants, and the sample as a whole. On average, women tended to score lower on the aggression measures (apart from Anger, where the reverse pattern was observed) than men, partially consistent with the results of Study 1. The finding of no significant sex differences on the Aggression Subscale scores fails to replicate both Study 1, as well as previous findings such as Buss and Perry (1992) in which physical aggression shows a large sex difference. However, sex differences on physical aggression do approach significance.

As per the invariance hypothesis (Sidanius & Pratto, 1994) and consistent with Study 1, SDO scores showed a significant sex difference. There is a significant difference between males and female RWA scores (with males scoring higher) as found on Study 1; this is consistent with some of the previous research described in the Study 1 Introduction. Gender Group identity scores exhibited the largest sex difference. This is expected as low scores (identification with women) are associated with female participants, and high scores (identification with men) are associated with male participants. There was a significant sex difference in the ages of participants, and (as shown in Table 9) age was also negatively correlated with aggression, and moderately positively associated with RWA. This suggests that a skewed distribution of participant ages could potentially affect other results.

As predicted, males have significantly higher scores on instrumental beliefs about aggression (as per Archer & Haigh, 1997); however, women do not have significantly higher scores on expressive beliefs about aggression; this fails to support that hypothesis.

Table 9
Overall Correlations

| | RWA | SDO | SDO-D | SDO-E | Anger | PA | Host. | VA | OA | Ins | Exp | P-Bi | P-M | P-F | ATW | Gdr | AiS |
|--------------------|------------|------------|--------------|--------------|--------------|-----------|--------------|-----------|-----------|------------|------------|-------------|------------|------------|------------|------------|------------|
| RWA | - | | | | | | | | | | | | | | | | |
| SDO-6 | .37** | - | | | | | | | | | | | | | | | |
| SDO-D | .45** | .90** | - | | | | | | | | | | | | | | |
| SDO-E | .28** | .87** | .56** | - | | | | | | | | | | | | | |
| Anger | .05 | .15 | .17* | .11 | - | | | | | | | | | | | | |
| Phys. Agg. | .05 | .18* | .25** | .07 | .42** | - | | | | | | | | | | | |
| Hostility | .14 | .25** | .33** | .01 | .43** | .38** | - | | | | | | | | | | |
| Verb. Agg. | -.08 | .10 | .16* | .00 | .42** | .35** | .29** | - | | | | | | | | | |
| Overall Agg | .08 | .24** | .32** | .10 | .77** | .78** | .74** | .63** | - | | | | | | | | |
| Instrum. | .24** | .35** | .45** | .17* | .29** | .47** | .31** | .27** | .48** | - | | | | | | | |
| Expressive | -.06 | .00 | .03 | -.01 | .26** | .19* | .15 | .06 | .24** | .29** | - | | | | | | |
| PAQ – Bi | .01 | .03 | .07 | -.01 | -.03 | .21** | -.29** | .12 | .00 | .17* | -.22** | - | | | | | |
| PAQ-Masc | -.02 | -.07 | -.06 | -.06 | -.09 | .23** | -.21** | .01 | -.01 | -.02 | -.06 | .44** | - | | | | |
| PAQ-Fem | -.13 | -.29* | -.24** | -.27** | -.14 | -.19* | -.11 | -.19* | -.21** | -.23** | .08 | -.31** | .12 | - | | | |
| ATW | .71** | .40** | .45** | .17* | .12 | .16* | .16* | .08 | .18* | .21** | -.05 | .10 | -.02 | -.23** | - | | |
| Gender | -.30** | .28** | .36** | .15 | .12 | .31** | .13 | .12 | .25** | .37** | -.01 | .35** | .09 | -.37** | .38** | - | |
| AiS | .49** | .50** | .52** | .35** | .18* | .36** | .33** | .15 | .37** | .39** | .01 | .12 | .01 | -.14 | .41** | .43** | - |
| Age | .33** | .03 | .05 | .00 | -.16* | -.27** | -.10 | -.12 | -.23** | -.05 | -.06 | .07 | -.02 | -.11 | .20* | .20* | .07 |

* = $p < .05$, ** = $p < .01$.

Overall correlations

Table 9 shows the overall correlations for all variables in Study 2. SDO and RWA are correlated at .37, which is lower than the correlation of .54 found in Study 1. This potentially indicates significant differences between the two samples. In Study 1, SDO was significantly related to overall aggression, hostility and physical aggression; this finding was replicated in Study 2. In Study 1, RWA was significantly related to overall aggression, hostility and physical aggression. These findings were *not* replicated. In Study 2 RWA was unrelated to the Aggression Questionnaire subscales. However RWA was positively associated with instrumental beliefs about aggression. As predicted, SDO was also highly positively correlated with instrumental aggression.

Instrumental aggression is highly correlated with all the AQ subscales; expressive aggression is somewhat correlated with physical aggression and anger, but not correlated with verbal aggression and hostility. Age is positively associated with higher RWA scores and negatively associated with anger, physical aggression and overall aggression. Clearly, younger participants are more aggressive and less authoritarian than older participants.

Gender identification is associated with physical aggression, overall aggression and instrumental aggression, suggesting that the more 'male' a person views themselves as being, the more aggressive they are. The PAQ scale reveals some interesting correlations. Femininity was associated with lower levels of SDO and aggression (physical aggression, verbal aggression, overall levels and instrumental beliefs). Masculinity was associated with higher levels of physical aggression and negatively correlated with hostility. Masculinity has no association with RWA,

failing to support the hypothesis that RWA would be associated with masculinity. Masculinity is also unassociated with SDO scores or instrumental beliefs about aggression. Bipolar PAQ scores, like masculinity, are associated with higher levels of physical aggression and negatively correlated with hostility, and moderately associated with instrumental beliefs about aggression. Sexist attitudes towards women are very highly associated with SDO and RWA (replicating, for instance, McFarland & Adelson, 1996). Sexism is also somewhat associated with physical aggression, hostility and instrumental aggression.

Positive attitudes towards the use of aggression in society (the AiS scale) are associated with all the Aggression Questionnaire items (excepting verbal aggression, which is non-significant) and instrumental beliefs about aggression. The AiS scale is also highly correlated with both RWA and SDO attitudes.

Table 10
Correlations by sex

| | RWA | | SDO-6 | | SDO-D | | SDO-E | | Anger | | Physical Agg | | Hostility | | Verbal Agg | | Overall Agg | |
|--------------------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------------|-------|-----------|--------|------------|-------|-------------|-------|
| | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem |
| RWA | - | - | | | | | | | | | | | | | | | | |
| SDO-6 | .29* | .43** | - | - | | | | | | | | | | | | | | |
| SDO-D | .38** | .44** | .89** | .90** | - | - | | | | | | | | | | | | |
| SDO-E | .14 | .34** | .82** | .90** | .46** | .61** | - | - | | | | | | | | | | |
| Anger | .07 | .07 | .30* | .09 | .25+ | .16 | .29* | .02 | - | - | | | | | | | | |
| PA | .04 | .03 | .24+ | .12 | .24+ | .22* | .15 | .00 | .46** | .43** | - | - | | | | | | |
| Hostility | .07 | .20* | .31* | .23* | .35** | .34** | .15 | .07 | .29* | .51** | .48** | .33** | - | - | | | | |
| VA | -.14 | -.07 | .37** | -.06 | .26* | .09 | .34** | -.17 | .46** | .41** | .38** | .34** | .34** | .27** | - | - | | |
| OA | .03 | -.24* | .39** | .15 | .37** | .29** | .29* | -.01 | .75** | .79** | .83** | .76** | .72** | .74** | .66** | .61** | - | - |
| Instrum. A. | .17 | .20** | .33* | .27** | .47** | .33** | .10 | .15 | .50** | .21* | .53** | .42** | .41** | .28** | .34** | .23* | .62** | .41** |
| Expressive | -.07 | -.03 | -.11 | .08 | .00 | .08 | -.14 | .07 | .28* | .25* | -.01 | .33** | .20 | .12 | -.08 | .14 | .15 | .30** |
| PAQ – Bi | -.13 | -.02 | -.01 | -.07 | -.09 | .01 | .10 | -.13 | .04 | -.04 | .23 | .15 | -.19 | -.36** | -.03 | .17 | .03 | -.05 |
| PAQ-Masc | .03 | -.04 | .12 | -.15 | .01 | -.09 | .22 | -.17 | .02 | -.13 | .12 | .27** | .00 | -.28** | .00 | .02 | .05 | -.04 |
| PAQ-Fem | .00 | -.17 | -.35** | -.18 | -.22 | -.16 | -.42** | -.16 | -.28* | -.10 | -.35** | -.06 | -.19 | -.08 | -.28* | -.14 | -.37** | -.12 |
| ATW | .74** | .65** | .34** | .35** | .34** | .37** | .31* | .25** | .26* | .05 | .25* | .02 | .17 | .17 | .04 | .07 | .26* | .11 |
| Gender | .20 | .26** | .26* | .11 | .24 | .25** | .22 | -.05 | .23 | .23* | .29* | .31** | .20 | .15 | -.08 | .23* | .25* | .32 |
| AiS | .43** | .50** | .38** | .50** | .45** | .49** | .17 | .39** | .18 | .23* | .44** | .32** | .37** | .31** | .15 | .13 | .41** | .36** |
| Age | .42** | .16 | .17 | -.17 | .24p | -.25* | .03 | -.07 | -.09 | -.20* | -.33** | .00 | -.09 | -.11 | -.23 | -.06 | -.25* | -.24* |

*† = p < .10, * = p < .05, ** = p < .01.*

Table 11

Correlations by Sex (continued)

| | Instrumental Aggression | | Expressive Aggression | | PAQ-Bipolar | | PAQ-Masculinity | | PAQ-Femininity | | Attitudes to Women | | Gender Identity | | Aggression in Society | |
|--------------------|-------------------------|-------|-----------------------|------|-------------|-------|-----------------|------|----------------|------|--------------------|-------|-----------------|-------|-----------------------|------|
| | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem | Male | Fem |
| Instr. Agg. | - | - | | | | | | | | | | | | | | |
| Expressive | .34** | .32** | - | - | | | | | | | | | | | | |
| PAQ – Bi | .03 | .10 | -.27* | -.18 | - | - | | | | | | | | | | |
| PAQ-Masc | -.04 | -.02 | -.24 | .02 | .39** | .48** | - | - | | | | | | | | |
| PAQ-Fem | -.17 | -.17 | .13 | .01 | -.38** | -.20* | .06 | .16 | - | - | | | | | | |
| ATW | .32* | .13 | .04 | -.09 | .03 | -.04 | .10 | -.09 | -.18 | -.13 | - | - | | | | |
| Gender | .31* | .15 | -.09 | .17 | .28* | .19 | .13 | .09 | -.39** | -.14 | .20 | .17 | - | - | | |
| AiS | .35* | .32** | -.06 | .05 | -.06 | .10 | .07 | .00 | -.05 | -.10 | .39** | .32** | .37** | .33** | - | - |
| Age | -.01 | -.20* | .07 | -.13 | -.05 | .06 | -.05 | -.01 | -.07 | -.06 | .20 | .07 | .17 | .04 | .11 | -.05 |

* = $p < .05$, ** = $p < .01$.

Correlations by Sex

In Study 1, SDO was significantly related to overall aggression and especially physical aggression for females, but unrelated to the Aggression Questionnaire subscales for males. These associations were not replicated. In Study 2, the pattern of association was almost the opposite. For males, SDO was positively, significantly associated with overall aggression, anger, verbal aggression and hostility, and physical aggression approached significance. For females, only hostility was positively significantly associated with SDO. SDO was strongly negatively associated with femininity for males, i.e., higher SDO males reported themselves to be less feminine than lower SDO males.

In Study 1, RWA was significantly correlated with overall aggression, hostility and anger for males, but not for females. This finding was not replicated. In Study 2, RWA was positively associated with hostility for females, and negatively associated with overall aggression for females; RWA was unrelated to aggression in males.

Physical aggression scores were negatively associated with femininity for men; for women, physical aggression scores were positively associated with masculinity. In other words, feminine men are less physically aggressive, whereas masculine women are more physically aggressive. For women, expressive beliefs about aggression are associated with physical aggression scores. These were unrelated for men. Masculinity was strongly negatively correlated with hostility for women, indicating that masculine women are less hostile than non-masculine women. Masculinity was not associated with hostility in men. Instrumental beliefs about aggression decrease with age in women, but there is no matching association in men.

Sexism is associated with RWA and SDO approximately equally for men and women, thus failing to support the hypothesis that high-SDO and RWA males would be more sexist than high-SDO and RWA females. Interestingly, sexist attitudes towards women are associated with anger, physical aggression, overall aggression and instrumental beliefs about aggression for males, but unrelated to aggression for females.

Study 2 Regressions

Regressions were carried out on the Aggression Questionnaire subscales using RWA, SDO, SDO-D, SDO-E, sex, the PAQ subscales (Bipolar, Masculinity, Femininity), the Gender Identification scale, and the EXPAGG scales (instrumental beliefs about aggression; expressive beliefs about aggression).

Table 12

Multiple Regression Analysis for Physical Aggression

| | | Unstandardised B (SE) | Standardised β | Adjusted R ² | ΔR^2 |
|-------------|-------------------|--------------------------|-------------------------|-------------------------|--------------|
| <i>Step</i> | | | | | |
| <i>1</i> | | | | | |
| | Constant | 0.91 (0.16) | | | |
| | Instrumental Agg. | 0.51 (0.08) | .48 | .23 | .23*** |
| <i>Step</i> | | | | | |
| <i>2</i> | | | | | |
| | Constant | -0.22 (0.34) | | | |
| | Instrumental Agg. | 0.52 (0.07) | .49 | | |
| | PAQ-Masculinity | 0.31 (0.08) | .26 | .29 | .06*** |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): RWA, SDO-D, SDO-E, PAQ-F, PAQ-B, Gender, Expressive Aggression. All betas in this regression were significant.

In Study 1, SDO and sex were major predictors of physical aggression. In this significant ($F(2, 151) = 14.24, p < .0001$) analysis of Study 2 participants, however, those are non-significant predictors. Instead, instrumental aggression is the major predictor of physical aggression, predicting 23% of physical aggression scores. This is followed by masculinity scores which predict a relatively minor 6%. This is consistent with previous research such as Archer and Haigh (1997) and Buss and Perry (1992).

The observed differences between Study 1 and Study 2 may suggest some significant differences between the participants in the two samples.

Table 13
Multiple Regression Analysis for Hostility

| | | Unstandardised B (SE) | Standardised β | Adjusted R ² | ΔR^2 |
|-------------|-------------------|--------------------------|-------------------------|-------------------------|--------------|
| <i>Step</i> | | | | | |
| <i>1</i> | | | | | |
| | Constant | 1.94 (0.14) | | | |
| | SDO-D | 0.22 (0.05) | .33 | .10 | .10*** |
| <i>Step</i> | | | | | |
| <i>2</i> | | | | | |
| | Constant | 3.30 (0.33) | | | |
| | SDO-D | 0.23 (0.05) | .34 | | |
| | PAQ-Bipolar | -0.50 (0.11) | -.33 | .21 | .11*** |
| <i>Step</i> | | | | | |
| <i>3</i> | | | | | |
| | Constant | 3.12 (0.32) | | | |
| | SDO-D | 0.16 (0.05) | .23 | | |
| | PAQ-Bipolar | -.55 (0.11) | -.36 | | |
| | Instrumental Agg. | 0.27 (0.07) | .27 | .26 | .05*** |
| <i>Step</i> | | | | | |
| <i>4</i> | | | | | |
| | Constant | 3.23 (0.32) | | | |
| | SDO-D | 0.12 (0.05) | .18 | | |
| | PAQ-Bipolar | -0.65 (0.11) | -.43 | | |
| | Instrumental Agg. | 0.22 (0.08) | .22 | | |
| | Gender Identity | 0.10 (0.04) | .20 | .28 | .03* |
| <i>Step</i> | | | | | |
| <i>5</i> | | | | | |
| | Constant | 3.05 (0.33) | | | |
| | SDO-D | 0.13 (0.05) | .19 | | |
| | PAQ-Bipolar | -0.64 (0.11) | -.42 | | |
| | Instrumental Agg. | 0.22 (0.08) | .23 | | |
| | Gender Identity | 0.17 (0.05) | .34 | | |
| | Sex | -0.31 (0.15) | .20 | .30 | .02* |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): RWA, SDO-E, Expressive Aggression, PAQ-M, PAQ-F. All betas in this regression were significant.

This significant analysis ($F(5, 148) = 4.57, p = .034$) is consistent with Study 1, in which SDO-D was the only predictor of hostility. Here we can see that SDO-D and (lacking) androgynous gender traits are the major predictors, with some smaller predictors being instrumental aggression, gender identification and sex.

It is particularly interesting that masculinity-femininity (PAQ-Bipolar) is a negative predictor of hostility, indicating that participants scoring towards the masculine end of the bipolar scale tended to score lower on hostility – which is consistent with the relationship reported between the PAQ Masculinity scale and hostility.

Gender identity and sex predict hostility, pointing to a sex difference in hostility scores. Also, as in Study 1, although RWA was correlated with hostility, it is not a significant predictor in this analysis.

The inclusion of instrumental aggression is interesting, suggesting that hostile behaviour might be used in an instrumental manner by some participants.

Table 14*Multiple Regression Analysis for Verbal Aggression*

| | | Unstandardised B (SE) | Standardised β | Adjusted R ² | ΔR^2 |
|-------------|-------------------|--------------------------|-------------------------|-------------------------|--------------|
| <i>Step</i> | | | | | |
| <i>1</i> | | | | | |
| | Constant | 2.17 (0.16) | | | |
| | Instrumental Agg. | 0.31 (0.08) | .31 | .09 | .09*** |
| <i>Step</i> | | | | | |
| <i>2</i> | | | | | |
| | Constant | 2.23 (0.20) | | | |
| | Instrumental Agg. | 0.35 (0.08) | .35 | | |
| | RWA | -0.12 (0.06) | -.16 | .11 | .02* |
| <i>Step</i> | | | | | |
| <i>3</i> | | | | | |
| | Constant | 3.44 (0.55) | | | |
| | Instrumental Agg. | 0.32 (0.08) | .32 | | |
| | RWA | -0.13 (0.06) | -.18 | | |
| | PAQ-Femininity | -0.23 (0.12) | -.16 | .13 | .02* |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): SDO-D, SDO-E, sex, gender identification, PAQ-M, PAQ-Bi, Expressive Aggression. All betas in this regression were significant.

This significant analysis ($F(3, 150) = 3.94, p = .05$) shown in Table 14 suggests that instrumental aggression is the major predictor of verbal aggression, confirming that verbal aggression is sometimes used in an instrumental manner (e.g., Archer & Haigh, 1997). RWA and feminine scores on the PAQ scale are smaller, negative predictors of verbal aggression. Note that in Study 1, RWA was not a significant predictor of verbal aggression.

Table 15*Multiple Regression Analysis for Anger*

| | Unstandardised B (SE) | Standardised β | Adjusted R^2 | ΔR^2 |
|-------------------|--------------------------|----------------------|----------------|--------------|
| <i>Step 1</i> | | | | |
| Constant | 1.60 (0.17) | | | |
| Instrumental Agg. | 0.32 (0.08) | .31 | .09 | .09*** |
| <i>Step 2</i> | | | | |
| Constant | 1.10 (0.27) | | | |
| Instrumental Agg. | 0.26 (0.08) | .25 | | |
| Expressive Agg. | 0.20 (0.08) | .19 | .12 | .03* |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): RWA, SDO-D, SDO-E, sex, gender identification, PAQ-M, PAQ-F, PAQ-Bi.

In this significant analysis ($F(2, 151) = 5.85, p = .02$) anger scores are predicted best by instrumental beliefs about aggression, followed by expressive beliefs about aggression. This demonstrates that expressive and instrumental aggression differentially explain some of the variance in anger scores.

Table 16*Multiple Regression Analysis for Overall Aggression*

| | | Unstandardised B (SE) | Standardised β | Adjusted R ² | ΔR^2 |
|-------------|-------------------|--------------------------|-------------------------|-------------------------|--------------|
| <i>Step</i> | | | | | |
| <i>1</i> | | | | | |
| | Constant | 1.57 (0.11) | | | |
| | Instrumental Agg. | 0.37 (0.05) | .49 | .24 | .24*** |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): Expressive Aggression, RWA, SDO-D, SDO-E, sex, gender identification, PAQ-M, PAQ-F, PAQ-Bi. All betas in this regression were significant.

In this significant regression ($F(1, 152) = 49.18, p < .001$) we can see that instrumental beliefs about aggression predict almost a quarter of the variation in overall aggression scores. This is consistent because both scales are measuring aggression or beliefs about aggression.

EXPAGG Regressions

Regressions were carried out on the EXPAGG subscales Instrumental Aggression and Expressive Aggression using RWA, SDO, SDO-D, SDO-E, sex, the PAQ subscales (Bipolar, Masculinity, Femininity) and the Gender Identification scale. The AQ subscales were not included because their overlap with the EXPAGG scale is already known; their predictive powers are not in question (Archer & Haigh, 1997).

Table 17*Multiple Regression Analysis for Instrumental Beliefs about Aggression*

| | | Unstandardised B (SE) | Standardised β | Adjusted R ² | ΔR^2 |
|-------------|-----------------|--------------------------|-------------------------|-------------------------|--------------|
| <i>Step</i> | | | | | |
| <i>1</i> | | | | | |
| | Constant | 1.23 (0.14) | | | |
| | SDO-D | 0.29 (0.05) | .43 | .18 | .18*** |
| <i>Step</i> | | | | | |
| <i>2</i> | | | | | |
| | Constant | 0.36 (0.25) | | | |
| | SDO-D | 0.29 (0.05) | .42 | | |
| | Expressive Agg. | 0.28 (0.07) | .29 | .25 | .07*** |
| <i>Step</i> | | | | | |
| <i>3</i> | | | | | |
| | Constant | 0.06 (0.25) | | | |
| | SDO-D | 0.22 (0.05) | .32 | | |
| | Expressive Agg. | 0.27 (0.06) | .28 | | |
| | Gender Identity | 0.14 (0.04) | .29 | .32 | .07*** |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): RWA, SDO-E, sex, PAQ-M, PAQ-F, PAQ-Bi. All betas in this regression were significant.

This significant regression ($F(3, 150) = 25.15, p < .001$) shows that the SDO-D component of SDO is the best predictor of instrumental beliefs about aggression, predicting 18% of the variance in instrumental aggression. Expressive beliefs and gender identification are lesser predictors.

This is particularly interesting because it suggests that the SDO-D component of SDO is strongly associated with instrumental beliefs about aggression, as predicted.

Table 18*Multiple Regression Analysis for Expressive Beliefs about Aggression*

| | | Unstandardised B (SE) | Standardised β | Adjusted R ² | ΔR^2 |
|-------------|-------------------|--------------------------|-------------------------|-------------------------|--------------|
| <i>Step</i> | | | | | |
| <i>1</i> | | | | | |
| | Constant | 2.58 (0.17) | | | |
| | Instrumental Agg. | 0.31 (0.08) | .30 | .08 | .08*** |
| <i>Step</i> | | | | | |
| <i>2</i> | | | | | |
| | Constant | 3.71 (0.35) | | | |
| | Instrumental Agg. | 0.35 (0.08) | .34 | | |
| | PAQ-Bipolar | -0.44 (0.12) | -.28 | .15 | .07*** |
| <i>Step</i> | | | | | |
| <i>3</i> | | | | | |
| | Constant | 4.00 (0.37) | | | |
| | Instrumental Agg. | 0.39 (0.08) | .38 | | |
| | PAQ-Bipolar | -0.45 (0.12) | -.28 | | |
| | RWA | -0.12 (0.06) | -.16 | .17 | .02* |

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Excluded Variables (due to insignificance): SDO-D, SDO-E, sex, gender identity, PAQ-M, PAQ-F. All betas in this regression were significant.

In the significant analysis ($F(3, 150) = 11.33, p < .001$) shown in Table 18, expressive beliefs about aggression are most predicted by instrumental beliefs about aggression, which is consistent with Archer and Haigh's (1997) suggestion that expressive beliefs and instrumental beliefs are not orthogonal but correlated.

PAQ-Bipolar is a negative predictor of expressive beliefs about aggression. Again, this indicates that people scoring towards the masculine end of the bipolar scale also tend to have lower levels of expressive beliefs about aggression. After entry of Instrumental

Aggression, and the PAQ Bipolar scale variables, RWA was a weak unique predictor of expressive beliefs about aggression.

Finally, to test Wilson and Liu's (2003) finding that gender identity moderated the relationship between sex and social dominance orientation, a regression analysis was carried out on SDO-D using sex and gender identity.

Table 19

Multiple Regression Analysis for SDO-D

| | | Unstandardised B (SE) | Standardised β | Adjusted R ² | ΔR^2 |
|---|-----------------|--------------------------|-------------------------|-------------------------|--------------|
| <i>Step</i> | | | | | |
| <i>1</i> | | | | | |
| | Constant | 1.60 (0.24) | | | |
| | Sex | 0.65 (0.17) | .29*** | .08 | .08*** |
| <i>Step</i> | | | | | |
| <i>2</i> | | | | | |
| | Constant | 1.49 (0.24) | | | |
| | Sex | 0.11 (0.24) | .05 | | |
| | Gender Identity | 0.25 (0.08) | .34*** | .13 | .06*** |
| • = $p < .05$, ** = $p < .01$, *** = $p < .001$ | | | | | |

Table 19 shows a significant regression ($F(2, 165) = 13.34, p < .001$) demonstrating that, while biological sex is initially a significant predictor of SDO-D scores (as predicted by social dominance theory), when gender identity is included in the analysis, sex becomes a non-significant predictor of SDO-D. Gender identity moderates the relationship between sex and SDO-D, as found by Wilson and Liu (2003).

Study 2 Discussion

The addition of gender identity, masculinity/femininity and instrumental/expressive belief variables allowed the testing of several hypotheses.

It was speculated that the Study 1 sex differences in SDO/RWA vs aggression might be reflected in different types of aggression (instrumental/expressive). However, there were no sex differences in the relationship of instrumental and expressive aggression to SDO and RWA. Additionally, the sex differences in SDO/RWA vs aggression which were found in Study 1 were not replicated in Study 2.

It was hypothesised that gender group identity would mediate the sex-SDO relationship as found by Wilson and Liu (2003); this prediction was supported. This finding is consistent with other research (e.g., Foels & Pappas, 2004) finding that the invariance hypothesis as predicted by Social Dominance Theory is unsupported in various contexts.

It was predicted that males would have higher levels of instrumental beliefs about aggression, and females would have higher levels of expressive beliefs about aggression. While it was found that males did have higher levels of instrumental beliefs about aggression, females did not have significantly higher levels of expressive beliefs about aggression, so this hypothesis was only partly supported.

It was hypothesised that instrumental aggression would be associated with higher levels of SDO, because SDO individuals are described as using aggression for personal

dominance (Altemeyer, 1998), implying an instrumental use of aggression; this was supported with a moderate, positive, significant correlation between SDO and instrumental beliefs about aggression. Furthermore, a regression analysis demonstrated that the SDO-D component of SDO predicted 18% of the variance in instrumental beliefs about aggression. This suggests that attitudes supporting inequality in society explain almost a fifth of the variation in instrumental beliefs about personal aggression. The strength of this relationship is particularly impressive.

It was hypothesised that RWA and SDO would be associated with higher levels of anti-women beliefs; this was supported; in addition it was speculated that both SDO and RWA males would tend to be sexist and espouse anti-women beliefs; this was not supported, with men and women having similar SDO-sexism and RWA-sexism correlations. McFarland and Adelson (1996) found broadly similar results.

It was speculated that RWA males would have higher levels of masculinity due to traditional sex role beliefs. This was not supported. For males, RWA was unrelated to masculinity or femininity. Interestingly, SDO scores in males had a significant negative association with femininity scores; so it was *denial* of femininity that was related to social dominance for men. Similarly, denial of femininity was associated with physical aggression for men. Regression analyses found that masculinity predicted a small proportion of variance in physical aggression. These results are consistent with the sex differences generally found in physical aggression scores (Buss & Perry, 1992; Archer & Haigh, 1997).

The most interesting finding from Study 1, of a female SDO-aggression relationship, were not replicated, and indeed essentially the opposite, a male SDO-aggression relationship, was found. Similarly, results were different on the male RWA-hostility association. Given the significance of the results found, these differences were most likely not due to random differences, but may be due to differences between the two sample populations, or the different lengths and contexts of the studies themselves.

Study 2 revealed a similar pattern of association between SDO, RWA and aggression observed in Study 1; however, the sex differences observed in Study 1 disappeared almost completely in Study 2. In Study 1, female participants had a large SDO-aggression association, while male participants did not. In Study 2, this situation was reversed; SDO and aggression were correlated for males but not females. This may be due to random differences in the participants in the two studies, or it may be attributed to aspects of the Study 2 participant population differing from those in Study 1. Half of the Study 2 questionnaires were handed out in Lyall Bay, a suburb of Wellington which is somewhat less affluent in terms of income and property value than the suburbs of Thorndon and Wadestown used in Study 1; the other half of Study 2 questionnaires were handed out in Northland, a suburb similar to Thorndon and Wadestown. There was a lower response rate from Lyall Bay questionnaires at approximately half the response rate received from the other suburbs. The differences between the two samples in terms of income and social status could potentially be reflected in different political attitudes, affecting results.

Another explanation for the differences between Study 1 and 2 is the differing content of the questionnaires themselves. The Study 1 questionnaire, as part of a larger study, contained measures of political values and directly assessed the preferred political

party of the respondent. With these measures, Study 1 participants may have been primed to consider the SDO and RWA measures in a political sense. For Study 2, on the other hand, the political measures of Study 1 were replaced with the aggression measures of the EXPAGG and AiS, and gender measures such as the PAQ and gender identity scales. These scales may have given the overall questionnaire a non-political context. Roccato and Ricolfi (2005) found that the correlation between SDO and RWA was affected by the contrast of political ideology within countries; similarly, by priming subjects to consider issues from a party-political context, the effect of such ideological contrast might be stronger in Study 1 compared to the less political and less ideologised context of Study 2.

In general, the results of Study 2 confirm the central hypothesis that SDO and RWA are correlated with increased levels of overall aggression, physical aggression and hostility. Although sex differences in these relationships became unclear, reasons for this discrepancy were explored. Several predictions about the effect of sex roles in SDO/RWA were not supported; however, a few interesting new observations were made.

General Discussion

Major Findings

It is puzzling that the association between RWA, SDO and aggression has not previously been more closely examined. Adorno *et al* (1950) described aggression as worthy of particular attention in their research; and World War II, the largest aggressive conflict to date, was the original trigger for authoritarianism research. Given the historical tendency of dominant individuals and authorities to use hostile discourse and physical aggression to dominate and control others, the lack of research in this area presents itself as a glaring omission. The present study hopes to contribute to the filling of this gap in current research.

The central hypothesis that social dominance orientation and right wing authoritarianism would both be associated with increased levels of personal aggression was confirmed. Notably, there are specific types of aggression which are more associated with SDO and RWA, namely physical aggression and hostility. Instrumental beliefs about aggression are also associated with SDO, potentially supporting Altemeyer's (1998) conception of socially dominant individuals as Machiavellian and dominant. This finding that SDO and RWA are correlated with increased levels of aggression is consistent with the limited amounts of previous research that has been done (Ahmed & Lester, 2003; Lippa & Arad, 1999; McFarland & Adelson, 1996) and related attitudes such as support for war. For example, Heaven, Organ, Supavadeeprasit and Leeson (2006) found that SDO and RWA were both associated with increased support for the war in Iraq.

Both SDO and RWA were also found to be associated with support for the use of aggression in societal settings (such as corporal punishment in schools), reinforcing the link between these ideological attitudes and a variety of views about society and government. Even if the SDO/RWA predisposition to aggression is mild, it could still be important in terms of politics. Western social democracies rely on the attitudes of the voting public to influence the direction of their governments. The influence of right wing authoritarian attitudes is often described as a negative one (Altemeyer, 1998). With the finding that right wing authoritarianism and social dominance orientation are both associated with support for the use of aggression in society (such as, for instance, physical discipline in schools) there is an obvious link to New Zealand political events, namely the 2007 debate surrounding the repeal of Section 59 of the Crimes Act. The vision of a large group of mostly right-wing Christians led by the fundamentalist Destiny Church standing in front of Parliament protesting in favour of retaining the smacking status quo ("Destiny Loses", 2007) is an obvious example of religious conservative belief about the use of force in society. This is a reminder of the relevance and importance of research pertaining to right wing authoritarianism, social dominance orientation and aggression.

Although the effect of sex/gender on the relationship between SDO, RWA and aggression was unclear, there were several interesting results which lend themselves to further study. For instance, age was associated with both higher RWA and lower hostility. Sexism was directly related to aggression; and supportive attitudes towards the use of aggression in society was related to RWA, SDO, aggression and sexism. An investigation similar to Wilson and Liu's (2003) challenge to the invariance hypothesis found that the sex-SDO link was completely mediated by gender identity, a result which supports Social Identity Theory rather than Social Dominance Theory.

The collection of data in Wellington, New Zealand ties this study to a cultural location and context. Wellington is a notably liberal city, being the capital of New Zealand. The New Zealand psychological and political landscape features a high ideological contrast (i.e., between left and right) as described by Roccato and Ricolfi (2005). This tends to produce a high correlation between SDO and RWA, as observed.

Problems and Limitations

The most interesting finding from Study 1, of a female SDO-aggression relationship, were not replicated, and indeed the opposite, a male SDO-aggression relationship, was found. Similarly, results were different for RWA-hostility associations. The reasons for these differences were explored in the Study 2 discussion. It is speculated that the main reason for the differences was the differing contexts of the questionnaires themselves giving rise to a priming effect which increased perceived ideological contrast for participants in Study 1. This issue could be partially addressed by giving the participants the different measures one at a time in a randomised order, so that they cannot see the overall context of the questionnaire. This would work best in a controlled environment such as with a captive student sample, although this would remove one of the strengths of the current study (the use of a general population sample). Another option is to directly study the priming effects of different contexts on the measures used; priming effects have been studied in terms of SDO, for instance (Schmitt, Branscombe and Kappen, 2003). An understanding of priming effects may allow for a partial mitigation of, or adjustment for, such effects.

Another more general issue is potential self-selection for the study. Assuming that an equal number of men and women received the questionnaires after they were delivered, substantially more potential female participants returned their survey than male potential participants. This could be due to psychological factors unrelated to the study. For instance, perhaps men are more likely to be busy with employment or less likely to want to answer questions about their attitudes which might require reflection. There might be major problems for this research if the gender disparity in returns is due to psychological factors related to the study. Perhaps aggressive men are reluctant to answer questions about their own aggression, so only less-aggressive men returned their surveys, or perhaps only people who felt strongly about the questions asked (which involved potentially controversial items such as homosexuality, nudity, premarital sexual activity and social equality) were sufficiently motivated to fill in and return the six-page survey.

Regardless of the reason for the higher number of female respondents, the lower number of male participants affects the power of statistical tests performed on the group of male participants. This limitation might be mitigated by using a different sampling strategy; for example, selecting specific individuals from the electoral roll to receive individually addressed surveys.

The Aggression in Society (AiS) scale, constructed for the purposes of this study, gave some intriguing results which resonated with the central observations of RWA, SDO and aggression; however because the scale has not been used in previous research, its validity is uncertain. For instance, the scale mentions New Zealand-specific issues such as the potential prosecution of sports players who assault other players. These issues may not be useful measures in other countries or cultures. A pilot study to develop the scale and

multi-country validity testing of the resulting measure would help to transform the AiS scale from an ad-hoc scale to a internationally useful measure of attitudes towards the use of aggression in society.

A final limitation of the study is the use of self-report measures to assess aggressive behaviour. It may be more appropriate to use peer ratings rather than self-report measures due to image management and social desirability effects (although these were hopefully mitigated by the anonymous nature of the questionnaire) which may have reduced the accuracy of measurement of aggressive behaviour. Although there are logistical and organisational challenges in obtaining peer ratings for a general-population sample, these may be easier to collect in institutional or educational environments.

One strength of the current study is the use of a general population sample with a diverse range of ages and occupations, rather than a captive student sample. This is likely to be more useful in terms of real-world application and less likely to be affected by potential problems with younger sample populations, e.g., less crystallised attitudes (Sears, 1986).

Another strength of this research was the selection of widely used and well-studied measures of authoritarianism, social dominance orientation, aggression, sexism, masculinity and femininity. The use of popular measures allowed for direct comparisons to be made with a wide range of other studies and thus an immediate validation of general results.

Future Research

Aside from replicating and extending this current research, future research could look at religious beliefs in relation to beliefs about aggression (i.e., support for religious statements about aggression such as 'turn the other cheek' versus 'eye for an eye'), the role of parenting styles on beliefs about aggression (as hypothesised by Duckitt, 2001 and Duckitt et al, 2002), and measuring hormones such as testosterone to establish whether SDO is related to testosterone levels, and the effect of any SDO-testosterone relationship on aggression. The influence of testosterone on masculinity, social dominance and aggression has already been noted; however, the measurement of free testosterone using a salivary assay is an added complication and expense. Additionally, free testosterone levels may not directly affect aggression and dominance, but only become an important factor in certain situations of status threat (Joseph, Sellers, Newman & Mehta, 2006). The effect of testosterone is much stronger in the pre-natal environment, producing masculinisation of various body features (Mazur & Booth, 1998) and an increased perception of adult facial masculinity and dominance by female observers (Neave, Laing, Fink & Manning, 2003). Recent research into digit length ratio provides a potentially easily-measured indicator of prenatal testosterone levels (Neave *et al*, 2003). The ratio of the second and fourth digits is an indicator of the ratio of testosterone to estrogen in the prenatal environment; a high ratio of testosterone to estrogen tends to produce a longer 4th finger and a shorter 2nd finger. Thus, a high 4D:2D finger length ratio is an indicator of prenatal testosterone levels. Measurement of finger length can be performed easily with a simple photocopy of the hand, suggesting that using the 2D:4D ratio as an indicator of pre-natal testosterone in the study of social dominance and aggression could be a simple and fruitful addition to research.

This research has confirmed that hierarchical belief systems such as right wing authoritarianism and social dominance orientation tend to be associated with a mild predisposition for higher levels of physical aggression and hostility. This may be due to the dangerous-world effect for right-wing authoritarians and a perception of aggression as a potentially useful instrumental tool for social dominators. A sex difference in the association of RWA/SDO with aggression was observed and explored, but contradictory results were found between studies. In general, results indicated that the SDO construct is related to gender rather than sex, supporting the Social Identity Theory approach of social situationism, rather than the Social Dominance Theory that hierarchical beliefs are unchangeably rooted in evolutionary predispositions. However, given the relationships found between aggression and SDO, the Social Dominance Orientation construct may still be a useful tool in social psychology research.

References

- Adorno, T.W., Frenkel-Brunswol. E., Levinson, D.J., & Sanford, R.N. (1950). *The Authoritarian Personality*. New York, NY: Harper & Row.
- Ali Ahmed, A.T., & Lester, D. (2003). Authoritarian and aggressive attitudes in American students. *Psychological Reports*, 93, 448.
- Altemeyer, B. (1981). *Right-wing authoritarianism*. Winnipeg: University of Manitoba Press.
- Altemeyer, B. (1998). The other “Authoritarian Personality”. *Advances in Experimental Social Psychology*, 20, 47-92.
- Altemeyer, B. (2004). Highly Dominating, Highly Authoritarian Personalities. *The Journal of Social Psychology*, 144, 421-448.
- Anderson, P. & Aymami, R. (1993). Reports of female initiation of sexual contact: Male and female differences. *Archives of Sexual Behavior*, 22, 335-343.
- Anderson, P.B., & Struckman-Johnson, C. (1998). *Sexually Aggressive Women: Current Perspectives and Controversies*. New York, NY: Guildford Press.

Baron-Cohen, S. (2003). *The Essential Difference: The Truth about the Male and Female Brain*. New York, NY: Perseus Books.

Begany, J.J., & Milburn, M.A. (2002). Psychological predictors of sexual harassment: Authoritarianism, hostile sexism and rape myths. *Psychology of Men and Masculinity*, 3, 119-126.

Billings, S.W., Guastello, S.J., & Rieke, M.L. (1993). A comparison of the construct validity of three measures of authoritarianism. *Journal of Research in Personality*, 27, 328-348.

Bryant, F.B., & Smith, B.D. (2001). Refining the architecture of aggression: A measurement model for the Buss-Perry aggression questionnaire. *Journal of Research in Personality*, 35, 138-167.

Buss, A.H. & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*, 63, 254-459.

Campbell, A. (1986). Self-report of fighting of females. *British Journal of Criminology*, 26, 28-46.

Campbell, A. (1993). *Men, Women and Aggression*. New York, NY: HarperCollins.

Crowson, H.M., Debacker, T.K., & Thoma, S.J. (2005). Does authoritarianism predict post-9/11 attitudes? *Personality and Individual Differences*, 39, 1273-1283.

Dambrun, M., Duarte, S., & Guimond, S. (2004). Why are men more likely to support group-based dominance than women? The mediating role of gender. *British Journal of Social Psychology*, 43, 287-297.

Destiny loses in deal. (2007, 3 May). *The Press*. Retrieved May 23, 2007 from <http://www.stuff.co.nz/thePress>

Dill, K.E., Anderson, C.A., Anderson, K.B., & Deuser, W.E. (1997). Effects of Aggressive Personality on Social Expectations and Social Perceptions. *Journal of Research in Personality*, 31, 272-292.

Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology*, 33, 41-113.

Duckitt, J., Wagner, C., du Plessis, I., & Birum, I. (2002). The psychological bases of ideology and prejudice: Testing a dual process model. *Journal of Personality and Social Psychology*, 83, 75-93.

Duncan, L.E., Peterson, B.E., & Winter, D.G. (1997). Authoritarianism and gender roles: toward a psychological analysis of hegemonic relationships. *Personality & Social Psychology Bulletin*, 23, 41-50.

Ekehammar, B., Akrami, N., Gylje, M., & Zakrisson, I. (2004). What matters most to prejudice: Big Five personality, social dominance orientation or right-wing

authoritarianism? *European Journal of Personality*, 18, 463-482.

Erickson, P., & Rapkin, A. (1991). Unwanted sexual experiences among middle and high-school youth. *Journal of Adolescent Health*, 12, 319-325.

Foels, R. & Pappas, C. (2004). Learning and unlearning the myths we are taught: gender and social dominance orientation. *Sex Roles*, 50, 743-757.

Fossati, A. Maffei, C., Acquarini, E., & Di Ceglie, A. (2003). Multigroup confirmatory component and factor analyses of the Italian version of the Aggression Questionnaire. *European Journal of Psychological Assessment*, 19, 54-65.

Geis, F., & Christie, R. (1970). *Studies in Machiavellianism*. New York, NY: Academic Press.

Gelles, R.J. (2007). The politics of research: The use, abuse and misuse of social science data - the cases of intimate partner violence. *Family Court Review*, 45, 42-51.

Guastello, D.D & Peissig, R.M. (1998). Authoritarianism, Environmentalism, and Cynicism of College Students and Their Parents. *Journal of Research in Personality*, 32, 397-410.

Hamberberg, L.K., & Renzetti, C. (Eds). (1994). *Domestic Partner Abuse*. New York, NY: Springer Publishing Company.

Hopkins, S. (2002). *Girl Heroes: The New Force in Popular Culture*. Christchurch, New Zealand: Hazard Press Ltd.

Heaven, P.C.L. (1999). Attitudes toward women's rights: Relationships with social dominance orientation and political group identities. *Sex Roles, 41*, 605-615.

Heaven, P.C.L., & Bucci, S. (2001). Right-Wing Authoritarianism, Social Dominance Orientation and Personality: An Analysis Using the IPIP Measure. *European Journal of Personality, 15*, 46-56.

Heaven, P.C.L., Organ, L., Supavadeeprasit, S., & Leeson, P. (2006). War and prejudice: A study of social values, right-wing authoritarianism and social dominance orientation. *Personality and Individual Differences, 40*, 559-608.

Heaven, P.C.L., & St. Quintin, D.. (2003). Personality factors predict racial prejudice. *Personality and Individual Differences, 34*, 625-634.

Izama, S., Kodama, M. & Nomura, S. (2005). A study on self and other ratings of hostility. *Japanese Journal of Psychology, 75*, 530-535.

John, O. P., & Srivastava, S. (1999). The Big-Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of Personality Theory and Research* (Vol. 2, pp. 102–138). New York, NY: Guilford Press.

Josephs, R. A., Sellers, J. G., Newman, M. L., & Mehta, P.H. (2006). The Mismatch Hypothesis: Testosterone, Status, and Psychological Functioning. *Journal of Personality and Social Psychology*, 90, 999-1013.

Jost, J.T., & Thompson, E.P. (2000). Group-based dominance and opposition to equality as independent predictors of self-esteem, ethnocentrism, and social policy attitudes among African Americans and European Americans. *Journal of Experimental Social Psychology*, 36, 209-232.

Kedgely, S. (1985). *The Sexual Wilderness: Men and Women in New Zealand*. Auckland, New Zealand: Reed Methuen Publishers Ltd.

King, N., & McCaughey, M. (2001). *Reel Knockouts: Violent Women in the Movies*. Austin, TX: University of Texas Press.

Kirkwood, D. (2003). Female perpetrated homicide in Victoria between 1985 and 1995. *Australian and New Zealand Journal of Criminology*, 36, 152-173.

Kirsta, A. (1994). *Deadlier than the male: violence and aggression in women*. London: Harpercollins.

Krahe, B., Waizenhofer, E., & Moller, I. (2003). Women's sexual aggression against men: prevalence and predictors. *Sex Roles*, 48, 219-232.

- Martin, J.L. (2001). The Authoritarian Personality, 50 Years Later: What Lessons Are There for Political Psychology? *Political Psychology*, 22, 1-24.
- Mazur, A., & Booth, A. (1998). Testosterone and dominance in men. *Behavioural and Brain science*, 21, 353-363.
- McCrae, R.R., & Costa, P.T. (1997). Personality trait structure as a human universal. *American Psychologist*, 51, 509-516.
- McHoskey, J.W. (1996). Authoritarianism and ethical ideology. *The Journal of Social Psychology*, 136, 709-718.
- Moffitt, T.E., Caspi, A., Rutter, M., & Silva, P. (2001). *Sex Differences in Antisocial Behaviour: Conduct Disorder, Delinquency, and Violence in the Dunedin Longitudinal Study*. Cambridge, UK: Cambridge Press.
- Muehlenhard, C. & Cook, S. (1988). Men's self-reports of unwanted sexual activity. *Journal of Sex Research*, 24, 58-72.
- Neave, N., Laing, S., Fink, B. & Manning, J.T. (2003). Second to fourth digit ratio, testosterone, and perceived male dominance. *Proceedings of the Royal Society of London B: Biological Sciences*, 270, 2167-2172.

- O'Connor, D.B., Archer, J. & Wu, F.C.W. (2004). Effects of Testosterone on Mood, Aggression, and Sexual Behavior in Young Men: A Double-Blind, Placebo-Controlled, Cross-Over Study. *The Journal of Clinical Endocrinology & Metabolism*, 89, 2837-2845.
- Peterson, B.E. & Duncan, L.E. (1999). Authoritarianism of Parents and Offspring: Intergenerational Politics and Adjustment to College. *Journal of Research in Personality*, 33, 494-513.
- Pratto, F., Sidanius, J., Stallworth, L.M., & Malle, B.F. (1994). Social Dominance Orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741-763.
- Pratto, F., Stallworth, L.M., Sidanius, J., & Siers, B. (1997). The gender gap in occupational role attainment: a social dominance approach. *Journal of Personality and Social Psychology*, 72, 37-53
- Ramirez, J.M, Andreu, J.M, & Fujihara, T. (2001). Cultural and sex differences in aggression: A comparison between Japanese and Spanish students using two different inventories. *Aggressive Behavior*, 27, 313-322.
- Ritter, D. (2003). Effects of menstrual cycle phase on reporting levels of aggression using the Buss and Perry Aggression Questionnaire. *Aggressive Behavior*, 29, 531-538.

- Roccato, M., & Ricolfi, L. (2005). On the correlation between right-wing authoritarianism and social dominance orientation. *Basic and Applied Social Psychology, 3*, 187–200.
- Rubinstein, G. (1995). Right-wing authoritarianism, political affiliation, religiosity, and their relation to psychological androgyny. *Sex Roles, 33*, 569-587.
- Ryan, K., & Kanjorski, J. (1998). The enjoyment of sexist humor, rape attitudes, and relationship aggression in college students. *Sex Roles, 38*, 743-756.
- Schmitt, M.T., Branscombe, N.R., & Kappen, D.M. (2003). Attitudes towards group-based inequality: Social dominance or social identity? *The British Journal of Social Psychology, 42*, 161-186.
- Sears, D.O. (1986). College Sophomores in the Laboratory: Influences of a Narrow Data Base on Social Psychology's View of Human Nature. *Journal of Personality and Social Psychology, 51*, 515-530.
- Shifren, K., & Bauserman, R.L. (1996). The relationship between instrumental and expressive traits, health behaviors, and perceived physical health. *Sex Roles, 34*, 841-864.
- Sibley, C. G., Robertson, A., & Wilson, M.S. (2006). Social Dominance Orientation and Right-Wing Authoritarianism: Additive and interactive effects. *Political Psychology, 27*, 755-768.

Sidanius, J. (1992). The Psychology of Group Conflict and the Dynamics of Oppression: A Social Dominance Perspective. In W. McGuire & S. Iyengar (Eds.), *Current Approaches to Political Psychology*. Durham, NC: Duke University Press.

Sidanius, J., & Ekehammer, B. (1980). Sex-related differences in socio-political ideology. *Scandinavian Journal of Psychology*, 21, 17-26.

Sidanius, J., Levin, S., Liu, J., & Pratto, F. (2000). Social dominance orientation, anti-egalitarianism and the political psychology of gender: An extension and cross-cultural replication. *European Journal of Social Psychology*, 30, 41-67.

Sidanius, J., Liu, J., Pratto, F., & Shaw, J. (1994). Social dominance orientation, hierarchy-attenuators and hierarchy-enhancers: Social dominance theory and the criminal justice system. *Journal of Applied Social Psychology*, 24, 338–366.

Sidanius, J. & Pratto, F. (1999). *Social Dominance: An Intergroup Theory of Social Hierarchy and Oppression*. Cambridge, UK: Cambridge University Press.

Sidanius, J., Pratto, F. & Bobo, L. (1994). Social Dominance Orientation and the political psychology of gender: A case of invariance. *Journal of Personality and Social Psychology*, 67, 998-1011.

Spence, J.T., & Helmreich, R.L. (1978). *Masculinity & femininity: their psychological dimensions, correlates, & antecedents*. Austin, TX: University of Texas Press.

- Straus, M.A. (1997). Physical Assaults by Women Partners: A Major Social Problem. In M.R. Walsh, (Ed.) *Men, Women and Gender: Ongoing Debates*. New Haven: Yale University Press.
- Straus, M.A. (2005). Physical Assault by wives: A major social problem. In D. Loseke, R.J. Gelles, & M. Cavanaugh (Eds.), *Current controversies on family violence* (pp. 55-78). Thousand Oaks, CA: Sage.
- Straus, M.A., & Gelles, R.J. (Eds.) (1990). *Physical Violence in American Families: Risk Factors and Adaptations to Violence in 8,145 Families*. New Brunswick, NJ: Transaction Publishers.
- Straus, M.A., & Ramirez, I.L. (2004). Criminal history and assaults of dating partners: The role of type of prior crime, age of onset, and gender. *Violence & Victims, 19*, 413-434.
- Strube, M.J., & Rahimi, A.M. (2006). "Everybody knows it's true": Social dominance orientation and right-wing authoritarianism moderate false consensus for stereotypic beliefs. *Journal of Research in Personality, 40*, 1038-1053.
- Struckman-Johnson, C. (1988). Forced sex on dates: It happens to men, too. *Journal of Sex Research, 24*, 234-241.

- Tajfel, H. & Turner, J. C. (1979). An Integrative Theory of Intergroup Conflict. In W. G. Austin and S. Worchel (Eds.), *The Social Psychology of Intergroup Relations*. Monterey, CA: Brooks/Cole.
- Tremblay, P.F., & Ewart, L.A. (2004). The Buss and Perry Aggression Questionnaire and its relations to values, the Big Five, provoking hypothetical situations, alcohol consumption patterns, and alcohol expectancies. *Personality and Individual Differences*, 38, 337-346.
- Van Hiel, A., & Kossowska, M. (2006). Having few positive emotions, or too many negative feelings? Emotions as moderating variables of authoritarianism effects on racism. *Personality and Individual Differences*, 40, 919-930.
- von Collani, G., & Werner, R. (2005). Self-related and motivational constructs as determinants of aggression. An analysis and validation of a German version of the Buss-Perry Aggression Questionnaire. *Personality & Individual Differences*, 38, 1631-1643.
- Walker, W.D., Rowe, R.C., & Quinsey, V.L. (1993). Authoritarianism and sexual aggression. *Journal of Personality and Social Psychology*. 65, 1036-1045.
- Ward, D. (1995). *Social Dominance Theory: Are The Genes Too Tight?* Paper Presented at the Eighteenth Annual Scientific Meeting of the International Society of Political Psychology, Washington D.C.

- Whitley, B.E. & Ægisdóttir, S. (2000). The Gender Belief System, Authoritarianism, Social Dominance Orientation, and Heterosexuals' Attitudes Toward Lesbians and Gay Men. *Sex Roles*, 42, 947-967.
- Wilson, M.S. (2005). Social values and subordination beliefs as the foundations of political conservatism. Under review.
- Wilson, M.S., & Liu, J.H. (2003). Social dominance orientation and gender: The moderating role of gender identity. *The British Journal of Social Psychology*, 42, 187-198.
- Woodham, K. (2006, July 30). Kerre Woodham: Justice in the line of public fire [Electronic version]. *The New Zealand Herald*. Retrieved May 23, 2007, from <http://www.nzherald.co.nz>

Appendix 1: Study 1 Questionnaire

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui



Social Science Research Questionnaire 2005

Dear householder,

Please consider completing and returning the survey included with this letter.

My name is Marc Wilson, and I teach psychology at Victoria University. This survey is intended to tell me what **YOU** think about some of the issues that are important in New Zealand. For example, recent years have seen the legalisation of prostitution, our limited military involvement in Iraq, and the announcement of a constitutional enquiry into whether or not New Zealand should become a republic.

This is an opportunity for you to express your views on issues like these.

If you are happy to help us in this project, please complete the survey and return it in the envelope provided. We would also like to thank you by placing you into a draw for a prize of **\$200**, and offer you the opportunity to receive a summary of the findings of this research. To do this, complete your details on the separate slip provided and return it with your survey – the slips are kept separately from your survey so your responses cannot be identified. Once the slips are separated, your survey is entirely anonymous (so please don't include any additional information on the survey that might be used to identify you).

The responses you give to the survey will be added to those provided by other people, and then analysed to identify the extent to which New Zealanders support or oppose the positions described in the survey. For this reason, there are no right or wrong answers – only what YOU think. We intend to make the results of the anonymous group data available through news media (and through academic outlets like scientific journals and conferences) to help other New Zealanders, as well as governmental organisations, understand these issues. Participation is completely voluntary, takes approximately half an hour, and returning the survey indicates that you're happy for us to use your responses. As part of the ethical code under which this research is conducted, the anonymous responses you provide will be retained (by me, securely in my office) for at least five years. We must also make the anonymous responses available to other researchers in this area should they ask us, and some of the data will be used for a 4th-year report by one of our students, Luke Howison.

Once again, we consider this an important project and welcome your assistance. If you're happy to participate, please complete and return the survey, with our thanks. If you have any questions about the research please contact me using the information provided below,

Thanks in advance!

Dr. Marc Wilson (Senior Lecturer)
School of Psychology
Victoria University of Wellington

Ph: 04-463-5225
Email: marc.wilson@vuw.ac.nz



Social Science Research Questionnaire 2005

Thank you for considering participation in this project. Please read through the questions in the survey and (following the instructions) indicate what you think or feel about each one. Most of these ask you to read a statement and then circle a number (or tick a box) indicating your response.

Many of the statements below reflect different positions on a range of issues – opinions in fact. This means that some of the statements appear to be contradictory, and this reflects the fact that different people see issues in different ways – it is not an attempt to catch you out. You will probably agree with some, and disagree strongly with others, and that is what we'd like to know.

YOUR ATTITUDES

| The questions listed below are presented as statements of opinions. Just like opinions in everyday life they can be contradictory. After you have read through each statement, circle a number that indicates the extent to which you agree or disagree with that statement. There are no right or wrong answers - the best answer is <u>your</u> own opinion. | | | | | |
|---|---|---|--------|--------|---|
| | ↓ | | | | ↓ |
| Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us | 1 | 2 | 3 6 | 4 7 | 5 |
| Gays and lesbians are just as healthy and moral as anybody else | 1 | 2 | 3 6 | 4 7 | 5 |
| Our country will be great if we honour the ways of our forefathers, do what the authorities tell us to do, and get rid of the "rotten apples" who are ruining everything | 1 | 2 | 3 6 | 4 7 | 5 |
| Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly | 1 | 2 | 3 6 | 4 7 | 5 |
| The <i>real</i> key to the "good life" is obedience, discipline, and sticking to the straight and narrow | 1 | 2 | 3 6 | 4 7 | 5 |
| A lot of our rules regarding modesty and sexual behaviour are just customs which are not necessarily any better or holier than those which other people follow | 1 | 2 | 3 6 | 4 7 | 5 |
| There are many radical, immoral people in our country today, who are trying to ruin it for their own godless purposes, whom the authorities should put out of action | 1 | 2 | 3 6 | 4 7 | 5 |
| It is always better to trust the judgment of the proper authorities in government and religion than listen to noisy rabble-rousers in | 1 | 2 | 3 6 | 4 7 | 5 |

| | | | | | |
|--|---|---|---|---|---|
| society who are trying to create doubt in people's minds | | | | | |
| There is absolutely nothing wrong with nudist camps | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| There is no "ONE right way" to live life; everybody has to create their <i>own</i> way | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibre and traditional beliefs | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| Homosexuals and feminists should be praised for being brave enough to defy "traditional family values" | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| The situation in our country is getting so serious, the strongest methods would be justified if they eliminated the troublemakers and got us back to our true path | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| It may be considered old fashioned by some, but having a normal proper appearance is still the mark of a gentleman and, especially, a lady | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| A "woman's place" should be wherever she wants to be. The days when women were submissive to their husbands and social conventions belong strictly in the past | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| Our country <i>needs</i> free thinkers who will have the courage to defy traditional ways, even if this upsets many people | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| There is nothing wrong with premarital sexual intercourse | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| It would be best for everyone if the proper authorities censored magazines so that people could not get their hands on trashy and disgusting material | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| It is wonderful that young people today have greater freedom to protest against things they don't like, and to make their own "rules" to govern their behaviour | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| What our country <i>really</i> needs, instead of more "civil rights," is a good dose of law and order | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| Some of the best people in our country are those who are challenging our government, criticising religion, and ignoring the "normal way" things are supposed to be done | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| Obedience and respect for authority are the most important virtues children should learn | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |

| | | | | | |
|---|---|---|---|---|---|
| Nobody should "stick to the straight and narrow." Instead people should break loose and try out lots of different ideas and experiences | 1 | 2 | 3 | 4 | 5 |
| | | | 6 | 7 | |
| Once our government leaders give us the "go ahead" it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within | 1 | 2 | 3 | 4 | 5 |
| | | | 6 | 7 | |
| We should treat protestors and radicals with open arms and open minds, since new ideas are the lifeblood of progressive change | 1 | 2 | 3 | 4 | 5 |
| | | | 6 | 7 | |
| The facts on crime, sexual immorality, and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers if we are going to save our moral standards and preserve law and order | 1 | 2 | 3 | 4 | 5 |
| | | | 6 | 7 | |

Which of the statements below do you have a positive or negative feeling towards? Beside each object or statement, place a number from '1' to '7' which represents the strength of your positive or negative feeling. If you have a strong negative feeling then circle '1', if you have a strong positive feeling circle '7', and if you feel neither positive or negative circle '4'

| | Strongly Strongly Negative Positive | | | Neutral | | |
|--|--|---|---|----------------|---|--|
| | ↓ | | | ↓ | | |
| Some groups of people are simply inferior to other groups. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| We should have increased social equality. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| All groups should be given an equal chance in life. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| In getting what you want, it is sometimes necessary to use force against other groups. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| It is okay if some groups have more of a chance in life than others. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| No one group should dominate in society. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| To get ahead in life, it is sometimes necessary to step on other groups. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| If certain groups stayed in their place, we would have fewer problems. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| Group equality should be our ideal. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| We should strive to make incomes as equal as possible. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| Sometimes other groups must be kept in their place. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |
| We would have fewer problems if we treated people more equally. | 1 | 2 | 3 | 4 | 5 | |
| | | | 6 | 7 | | |

| | | | | | |
|---|---|---|---|---|---|
| Inferior groups should stay in their place. | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| We should do what we can to equalize conditions for different groups. | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| It would be good if groups could be equal . | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |
| It's probably a good thing that certain groups are at the top and other groups at the bottom. | 1 | 2 | 3 | 4 | 5 |
| | | 6 | 7 | | |

There follows a list of descriptions that describe how people sometimes *might* think of themselves. Please read through the list, and using the five-point scale below, indicate how uncharacteristic or characteristic each statement is in describing you.

Write the appropriate number next to each statement.

| | | | | |
|------------------------|-----------------------|------------------------------|---------------------|--------------|
| Extremely unlike me | Somewhat unlike me | Neither like or unlike me | Somewhat like me | Very like me |
| ↓ | ↓ | ↓ | ↓ | ↓ |
| 1 | 2 | 3 | 4 | 5 |

- _____ Some of my friends think I am a hothead
- _____ If I have to resort to violence to protect my rights, I will
- _____ When people are especially nice to me, I wonder what they want
- _____ I tell my friends openly when I disagree with them
- _____ I have become so mad that I have broken things
- _____ I can't help getting into arguments when people disagree with me
- _____ I wonder why sometimes I feel so bitter about things
- _____ Once in a while, I can't control the urge to strike another person
- _____ I am an even-tempered person
- _____ I am suspicious of overly friendly strangers
- _____ I have threatened people I know
- _____ I flare up quickly but get over it quickly
- _____ Given enough provocation, I may hit another person
- _____ When people annoy me, I may tell them what I think of them
- _____ I am sometimes eaten up with jealousy
- _____ I can think of no good reason for ever hitting a person
- _____ At times I feel I have gotten a raw deal out of life
- _____ I have trouble controlling my temper
- _____ When frustrated, I let my irritation show
- _____ I sometimes feel that people are laughing at me behind my back
- _____ I often find myself disagreeing with people
- _____ If somebody hits me, I hit back

_____ I sometimes feel like a powder keg ready to explode
_____ Other people always seem to get the breaks
_____ There are people who pushed me so far that we came to blows
_____ I know that 'friends' talk about me behind my back
_____ My friends say that I'm somewhat argumentative
_____ Sometimes I fly off the handle for no good reason
_____ I get into fights a little more than the average person

YOUR VALUES

On this page there is a list of VALUES - these are proven ideas and goals that people typically use to decide how to act and think. We'd like you to rate each of the values in the list below according to how important they are as **GUIDING PRINCIPLES IN YOUR LIFE**. As there are quite a few of them, we find that the steps suggested below help people to think about their values:

- For each value we would like you to indicate how important each of these ideas is AS A GUIDING PRINCIPLE IN YOUR LIFE, using a number from the scale below:

| Opposed to my values ↓ | Not Important ↓ | | | Important ↓ | | | Very Important ↓ | Of Supreme Importance ↓ |
|---------------------------------|-----------------------|---|---|----------------|---|---|------------------------|----------------------------------|
| -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- First read through the list and decide which value (or values) are **MOST** important to you and put **7** for 'of supreme importance'.
- Secondly, decide which value (or values) are **LEAST** important to you and put **0** for 'not important' for these values. If there are any values that you feel are opposite to the values you hold most important, then put **-1** to indicate 'opposed to my values'
- Use these most and least important values to help you decide how important the rest of the list is to you.

| | |
|---|---|
| _____ EQUALITY (equal opportunity for all) | _____ SOCIAL JUSTICE (correcting injustice, care for the weak) |
| _____ INNER HARMONY (at peace with myself) | _____ EQUITY (each person rewarded according to their contribution) |
| _____ SOCIAL POWER (control over others, dominance) | _____ INDEPENDENT (self-reliant, self-sufficient) |
| _____ PLEASURE (gratification of desires) | _____ MODERATE (avoiding extremes of feeling and action) |
| _____ FREEDOM (freedom of action and thought) | _____ LOYAL (faithful to my friends, group) |
| _____ A SPIRITUAL LIFE (emphasis on spiritual not material matters) | _____ AMBITIOUS (hardworking, aspiring) |
| _____ SENSE OF BELONGING (feeling that others care about me) | _____ BROAD-MINDED (tolerant of different ideas and beliefs) |
| _____ SOCIAL ORDER (stability of society) | _____ HUMBLE (modest, self-effacing) |
| _____ AN EXCITING LIFE (stimulating experiences) | _____ DARING (seeking adventure, risk) |
| _____ MEANING IN LIFE (a purpose in life) | _____ PROTECTING THE ENVIRONMENT (preserving nature) |
| _____ POLITENESS (courtesy, good manners) | _____ INFLUENTIAL (having an impact on people and events) |
| _____ WEALTH (material possessions, money) | _____ HONOURING OF PARENTS AND ELDERS (showing respect) |
| _____ NATIONAL SECURITY (protection of my nation from enemies) | _____ CHOOSING OWN GOALS (selecting own purposes) |
| _____ SELF-RESPECT (belief in one's own worth) | _____ HEALTHY (not being sick physically or mentally) |
| _____ RECIPROCATION OF FAVOURS (avoidance of indebtedness) | _____ CAPABLE (competent, effective, efficient) |

| | |
|--|---|
| _____ CREATIVITY (uniqueness, imagination) | _____ ACCEPTING MY PORTION IN LIFE (taking life's circumstances) |
| _____ A WORLD AT PEACE (free of war and conflict) | _____ HONEST (genuine, sincere) |
| _____ RESPECT FOR TRADITION (preserving time-honoured customs) | _____ PRESERVING MY PUBLIC IMAGE (protecting my "face") |
| _____ MATURE LOVE (deep emotional and spiritual intimacy) | _____ OBEDIENT (dutiful, meeting obligations) |
| _____ SELF-DISCIPLINE (self-restraint, resistance to temptation) | _____ INTELLIGENT (logical, thinking) |
| _____ DETACHMENT (from worldly concerns) | _____ HELPFUL (working for the welfare of others) |
| _____ FAMILY SECURITY (safety for loved ones) | _____ ENJOYING LIFE (enjoying food, sex, leisure, etc.) |
| _____ SOCIAL RECOGNITION (respect, approval by others) | _____ DEVOUT (holding to religious faith and belief) |
| _____ UNITY WITH NATURE (fitting into nature) | _____ RESPONSIBLE (dependable, reliable) |
| _____ A VARIED LIFE (filled with challenge, novelty, and change) | _____ CURIOUS (interested in everything, exploring) |
| _____ WISDOM (a mature understanding of life) | _____ FORGIVING (willing to pardon others) |
| _____ AUTHORITY (the right to lead or command) | _____ SUCCESSFUL (achieving goals) |
| _____ TRUE FRIENDSHIP (close, supportive friends) | _____ CLEAN (neat, tidy) |
| _____ A WORLD OF BEAUTY (beauty of nature and the arts) | _____ FAIRNESS (in the distribution of social/economic resources) |

POLITICS in NEW ZEALAND

How do you feel about the **political parties in New Zealand**? The scale below runs from 1 to 7, where “**1**” means you feel very unfavourable toward a party, “**4**” means you feel neutral toward a party, and “**7**” means you feel very favourable toward a party.

| | Very Unfavourable | | | | Neutral | | | | Very Favourable | | | | | Very Unfavourable | | | | Neutral | | | | Very Favourable | | | | |
|--------------------------|-------------------|---|---|---|---------|---|---|--|-----------------|--|--|--|--|-----------------------------------|---|---|---|---------|---|---|---|-----------------|--|--|--|--|
| | ↓ | | | | | | | | ↓ | | | | | ↓ | | | | | | | | ↓ | | | | |
| National | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | Outdoor Recreation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | |
| Labour | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | The Greens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | |
| NZ First Alliance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | Destiny Progressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | |
| Act | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | Coalition United Future NZ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | |

How important are political matters to you?

Not at all important 1 2 3 4 5 6 7 **Very important**

Generally speaking, do you usually think of yourself as a National voter, Labour voter, Alliance voter, or what? _____

How strong is that feeling of support

Very Weak 1 2 3 4 5 6 7 **Very strong**

If an election were to be held now - what party would you give your party vote to? _____

Often, people use the terms “liberal” or “conservative” to describe their political beliefs. How would you rate yourself in these terms? (circle a number from 1 to 7)

Liberal 1 2 3 4 5 6 7 **Conservative**

Alternatively, people use the terms “left-wing” or “right-wing” to describe their political beliefs. How would you rate yourself in these terms? (circle a number from 1 to 7)

Left-wing 1 2 3 4 5 6 7 **Right-wing**

Here's a list of topical questions relating to independence and sovereignty. Please read through them, indicating your opinion on each.

| | | | |
|--|------------------------------|-----------------------------|--------------------------------|
| Should New Zealand become a Republic? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should there be a separate legal system for Maori? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should New Zealand and Australia develop a closer economic relationship | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should Maori be given the right to determine who has access to their tribal lands? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should New Zealand remain a member of the British Commonwealth? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should secondary students take a compulsory module on Maori (pre-colonisation) history? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should New Zealanders be eligible for Australian superannuation? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should the Treaty of Waitangi serve as a basis for allocation of social services (eg. health)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should the Queen continue to be New Zealand's head of state? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should secondary students take a compulsory module on British history? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should New Zealand adopt the Australian dollar as its unit of currency? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should University students be required to take a compulsory Maori studies paper? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should the English Privy Council remain the highest court of appeal for New Zealanders? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should Australians be eligible for New Zealand superannuation? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |
| Should Maori language be a compulsory subject at school? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Maybe |

Below is a series of questions about hunting (which, for this survey, refers to hunting animals using firearms). Please read through each statement below and circle a number that indicates the extent to which you agree or disagree with that statement.

Strongly Disagree **Neutral** **Strongly Agree**

| | ↓ | ↓ | ↓ | | | | |
|--|---|---|---|---|---|---|---|
| Hunting is a great way to get back to nature | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting animals is a cowardly pastime | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Animals hunt each other so it's fine for humans to hunt animals too | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting animals is unethical | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting is a dangerous pastime and should not be allowed | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| People shouldn't knock hunting till they've tried it | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Just because other animals prey on each other doesn't mean we should hunt them too | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting is a fun activity | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| If a person respects nature, they shouldn't go hunting animals | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting for sport is a perfectly moral pastime | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting animals is unfair because animals can't shoot back | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting animals is stupid | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Hunting animals is cruel and should not be allowed | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Have you ever been hunting? ☐ Yes ☐ No Is hunting a current pastime?
☐ Yes ☐ No

Background Information

We would like you to give us some background information about yourself. Please don't include any additional notes or information that could be used to identify you!

Are you? (tick ☒ one) ☐ Female ☐ Male What is your age? _____

What is your nationality? (tick one) ☐ New Zealand ☐ Other: _____

Which group best describes your ethnic origins (tick ☒ the most appropriate box)?

☐ New Zealand Pakeha/European ☐ New Zealand Maori ☐ Other: _____

What is your marital status? (tick ☒ the appropriate box)

☐ Single ☐ Married ☐ Widowed
☐ Romantically involved ☐ Separated ☐ Other: _____
☐ Defacto ☐ Divorced _____

Do you have a job at the moment? (tick ☒ one) ☐ Yes ☐ No

If you are working, what is your current occupation: _____

If you aren't working at the moment, what did your occupation used to be? _____

What is your highest level of education? (tick ☒ the appropriate box)

- | | |
|--|---|
| <input type="checkbox"/> Up to 5th form polytechnic or university | <input type="checkbox"/> More than 1 year of study towards a qualification at a |
| <input type="checkbox"/> Up to 6th form certificate | <input type="checkbox"/> Bachelors degree / trade certificate / advanced trade |
| <input type="checkbox"/> Up to 7th form | <input type="checkbox"/> Post graduate degree |

Roughly, what is your rough household income? (tick ☒ the appropriate box)

- | | | | | |
|---|---|---|---|---|
| <input type="checkbox"/> Up to \$20,000 | <input type="checkbox"/> \$20,000 to \$40,000 | <input type="checkbox"/> \$40,000 to \$60,000 | <input type="checkbox"/> \$60,000 to \$80,000 | <input type="checkbox"/> More than \$80,000 |
|---|---|---|---|---|

Roughly, what is your personal income? (tick ☒ the appropriate box)

- | | | | | |
|---|---|---|---|---|
| <input type="checkbox"/> Up to \$20,000 | <input type="checkbox"/> \$20,000 to \$40,000 | <input type="checkbox"/> \$40,000 to \$60,000 | <input type="checkbox"/> \$60,000 to \$80,000 | <input type="checkbox"/> More than \$80,000 |
|---|---|---|---|---|

Phew! Thanks for participating 😊

Appendix 2: Study 2 Questionnaire



Social Attitudes Research Questionnaire 2006

Dear Householder,

Please consider completing and returning the survey included with this letter.

My name is Luke Howison, and I am a Masters student at Victoria University (under the supervision of Dr. Marc Wilson). This survey is intended to tell me what you think about some of the issues that are important in New Zealand. For example, recent years have seen the legalisation of prostitution, our limited military involvement in Iraq, and the announcement of a constitutional enquiry into whether or not New Zealand should become a republic. We are also interested in your beliefs and attitudes about aggression, as well as how you think of yourself and your personality.

This is an opportunity for you to express your views on issues like these, because you live in one of the areas that we've selected (at random) to drop off this survey.

If you are happy to help us in this project, please complete the survey and return it in the envelope provided. We would also like to thank you by placing you into a draw for one of several double movie vouchers for Reading Cinemas, as well as the opportunity to receive a summary of the findings of this research. To do this, complete your details on the separate slip provided and return it with your survey – the slips are kept separately from your survey so your responses cannot be identified. Once the slips are separated, your survey is entirely anonymous (so please don't include any additional information on the survey that could identify you).

The responses you give to the survey will be added to those provided by other people, and then analysed to identify the extent to which New Zealanders support or oppose the positions described in the survey. For this reason, there are no right or wrong answers – only what YOU think. We intend to make the results of the anonymous group data available through news media (and through academic outlets like scientific journals and conferences) to help other New Zealanders, as well as governmental organisations, understand these issues. Participation is completely voluntary, takes approximately half an hour, and returning the survey indicates that you're happy for us to use your responses. As part of the ethical code under which this research is conducted, the anonymous responses you provide will be retained (by me, securely in my office) for at least five years. We must also make the anonymous responses available to other researchers in this area should they ask us, and the data will be the basis for a masters thesis by Luke Howison.

Once again, we consider this an important project and welcome your assistance. If you're happy to participate, please complete and return the survey, with our thanks. If you have any questions about the research please contact me using the information provided below.

Thanks for your consideration,

Luke Howison (Masters student)
School of Psychology

Email: lukehnz@gmail.com

Dr. Marc Wilson (Senior Lecturer)
School of Psychology
Victoria University of Wellington

Ph: 04-463-5225
Email: marc.wilson@vuw.ac.nz

Social Attitudes Research Questionnaire 2006

Thank you for considering participation in this project. Please read through the questions in the survey and (following the instructions) indicate what you think or feel about each one. Most of these ask you to read a statement and then circle a number (or tick a box) indicating your response.

Many of the statements below reflect different positions on a range of issues – opinions in fact. This means that some of the statements appear to be contradictory, and this reflects the fact that different people see issues in different ways – it is not an attempt to catch you out. You will probably agree with some, and disagree strongly with others, and that is what we'd like to know.

YOUR ATTITUDES

The questions listed below are presented as statements of opinions. Just like opinions in everyday life they can be contradictory. After you have read through each statement, circle a number that indicates the extent to which you agree or disagree with that statement. There are no right or wrong answers - the best answer is your own opinion.

| | Strongly Disagree | | | | | | Strongly Agree |
|--|-------------------|---|---|---|---|---|----------------|
| | ↓ 1 | 2 | 3 | 4 | 5 | 6 | ↓ 7 |
| Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Gays and lesbians are just as healthy and moral as anybody else | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Our country will be great if we honour the ways of our forefathers, do what the authorities tell us to do, and get rid of the "rotten apples" who are ruining everything | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The <i>real</i> key to the "good life" is obedience, discipline, and sticking to the straight and narrow | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| A lot of our rules regarding modesty and sexual behaviour are just customs which are not necessarily any better or holier than those which other people follow | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There are many radical, immoral people in our country today, who are trying to ruin it for their own godless purposes, whom the authorities should put out of action | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It is always better to trust the judgment of the proper authorities in government and religion than listen to noisy rabble-rousers in society who are trying to create doubt in people's minds | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|--|---|---|---|---|---|---|---|
| There is absolutely nothing wrong with nudist camps | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There is no "ONE right way" to live life; everybody has to create their <i>own</i> way | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibre and traditional beliefs | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Homosexuals and feminists should be praised for being brave enough to defy "traditional family values" | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The situation in our country is getting so serious, the strongest methods would be justified if they eliminated the troublemakers and got us back to our true path | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It may be considered old fashioned by some, but having a normal proper appearance is still the mark of a gentleman and, especially, a lady | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| A "woman's place" should be wherever she wants to be. The days when women were submissive to their husbands and social conventions belong strictly in the past | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Our country <i>needs</i> free thinkers who will have the courage to defy traditional ways, even if this upsets many people | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| There is nothing wrong with premarital sexual intercourse | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It would be best for everyone if the proper authorities censored magazines so that people could not get their hands on trashy and disgusting material | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It is wonderful that young people today have greater freedom to protest against things they don't like, and to make their own "rules" to govern their behaviour | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| What our country <i>really</i> needs, instead of more "civil rights," is a good dose of law and order | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Some of the best people in our country are those who are challenging our government, criticising religion, and ignoring the "normal way" things are supposed to be done | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Obedience and respect for authority are the most important virtues children should learn | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Nobody should "stick to the straight and narrow." Instead people should break loose and try out lots of different ideas and experiences | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Once our government leaders give us the "go ahead" it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| We should treat protestors and radicals with open arms and open minds, since new ideas are the lifeblood of progressive change | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The facts on crime, sexual immorality, and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers if we are going to save our moral standards and preserve law and order | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| Which of the statements below do you have a positive or negative feeling towards? Beside each object or statement, place a number from '1' to '7' which represents the strength of your positive or negative feeling. If you have a strong negative feeling then circle '1', if you have a strong positive feeling circle '7', and if you feel neither positive or negative circle '4' | Strongly Negative | | Neutral | | Strongly Positive | | |
|---|--------------------------|---|----------------|---|--------------------------|---|---|
| | ↓ | | ↓ | | ↓ | | |
| Some groups of people are simply inferior to other groups. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| We should have increased social equality. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| All groups should be given an equal chance in life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| In getting what you want, it is sometimes necessary to use force against other groups. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It is okay if some groups have more of a chance in life than others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| No one group should dominate in society. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| To get ahead in life, it is sometimes necessary to step on other groups. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| If certain groups stayed in their place, we would have fewer problems. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Group equality should be our ideal. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| We should strive to make incomes as equal as possible. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Sometimes other groups must be kept in their place. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| We would have fewer problems if we treated people more equally. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Inferior groups should stay in their place. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| We should do what we can to equalize conditions for different groups. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It would be good if groups could be equal . | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It's probably a good thing that certain groups are at the top and other groups at the bottom. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Beliefs about Aggression

The questions listed below are presented as statements of opinions. Just like opinions in everyday life they can be contradictory. After you have read through each statement, circle a number that indicates the extent to which you agree or disagree with that statement. There are no right or wrong answers - the best answer is your own opinion.

| | Strongly Disagree ↓ | | | | Strongly Agree ↓ |
|---|-----------------------------------|---|---|---|--------------------------------|
| During a physical fight I feel out of control. | 1 | 2 | 3 | 4 | 5 |
| I feel that physical aggression is necessary to get through to some people. | 1 | 2 | 3 | 4 | 5 |
| I am most likely to get physically aggressive when I've been under a lot of stress and some little thing pushes me over the edge. | 1 | 2 | 3 | 4 | 5 |
| If I hit someone and hurt them, I feel as if they were asking for it. | 1 | 2 | 3 | 4 | 5 |
| After a physical fight I feel drained and guilty. | 1 | 2 | 3 | 4 | 5 |
| In an argument I would feel more annoyed with myself if I cried than if I hit the other person. | 1 | 2 | 3 | 4 | 5 |
| After I lash out physically at another person, I would like them to acknowledge how upset they made me and how unhappy I was. | 1 | 2 | 3 | 4 | 5 |
| The best thing about physical aggression is that it makes the other person get in line. | 1 | 2 | 3 | 4 | 5 |
| I believe that my aggression comes from losing my self-control. | 1 | 2 | 3 | 4 | 5 |
| If someone challenged me to a fight in public I'd feel cowardly if I backed away. | 1 | 2 | 3 | 4 | 5 |
| I am more likely to lash out physically when I am alone with the person who is annoying me. | 1 | 2 | 3 | 4 | 5 |
| After I lash out physically at another person I would like to make sure they never annoy me again. | 1 | 2 | 3 | 4 | 5 |
| When I get to the point of physical aggression the thing I am most aware of is how upset and shaky I feel. | 1 | 2 | 3 | 4 | 5 |
| I am more likely to lash out physically when another person shows me up in public. | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| In a heated argument I am most afraid of saying something terrible that I can never take back. | 1 | 2 | 3 | 4 | 5 |
| I am most likely to get physically aggressive when I feel another person is trying to make me look like a jerk. | 1 | 2 | 3 | 4 | 5 |

| Read through each statement below, and circle the number that indicates the extent to which you agree or disagree with each one. There are no right or wrong answers. | Strongly Disagree ↓ | | | | Strongly Agree ↓ |
|--|-------------------------------|---|---|---|----------------------------|
| The government shouldn't be allowed to tell people they can't smack their children | 1 | 2 | 3 | 4 | 5 |
| Just as many women are physically violent towards their male partners, as men are towards their female partners | 1 | 2 | 3 | 4 | 5 |
| People should be allowed to use firearms to defend themselves if they (or their loved ones) are threatened with harm | 1 | 2 | 3 | 4 | 5 |
| The Bible gives moral justification for physical punishment of children | 1 | 2 | 3 | 4 | 5 |
| Regardless of the nature of a crime, there is no justification for the death penalty | 1 | 2 | 3 | 4 | 5 |
| It's perfectly appropriate to retaliate if someone throws the first punch | 1 | 2 | 3 | 4 | 5 |
| The police shouldn't be allowed to use physical force to prevent peaceful civil protest getting out of hand | 1 | 2 | 3 | 4 | 5 |
| Schools should have the right to physically discipline disobedient students | 1 | 2 | 3 | 4 | 5 |
| It's understandable why some people feel it necessary to engage in violent 'terrorist' action | 1 | 2 | 3 | 4 | 5 |
| Parents should not be allowed to smack their children, no matter what the circumstances | 1 | 2 | 3 | 4 | 5 |
| Police should prosecute sports people who are violent on the sports field | 1 | 2 | 3 | 4 | 5 |

There follows a list of descriptions that describe how people sometimes *might* think of themselves. Please read through the list, and using the five-point scale below, indicate how uncharacteristic or characteristic each statement is in describing you.

Write the appropriate number next to each statement.

| | | | | |
|------------------------|--|------------------------------|---------------------|--------------|
| Extremely unlike me | Somewhat unlike me | Neither like or unlike me | Somewhat like me | Very like me |
| ↓ | ↓ | ↓ | ↓ | ↓ |
| 1 | 2 | 3 | 4 | 5 |
| _____ | Some of my friends think I am a hothead | | | |
| _____ | If I have to resort to violence to protect my rights, I will | | | |

- _____ When people are especially nice to me, I wonder what they want
- _____ I tell my friends openly when I disagree with them
- _____ I have become so mad that I have broken things
- _____ I can't help getting into arguments when people disagree with me
- _____ I wonder why sometimes I feel so bitter about things
- _____ Once in a while, I can't control the urge to strike another person
- _____ I am an even-tempered person
- _____ I am suspicious of overly friendly strangers
- _____ I have threatened people I know
- _____ I flare up quickly but get over it quickly
- _____ Given enough provocation, I may hit another person
- _____ When people annoy me, I may tell them what I think of them
- _____ I am sometimes eaten up with jealousy
- _____ I can think of no good reason for ever hitting a person
- _____ At times I feel I have gotten a raw deal out of life
- _____ I have trouble controlling my temper
- _____ When frustrated, I let my irritation show
- _____ I sometimes feel that people are laughing at me behind my back
- _____ I often find myself disagreeing with people
- _____ If somebody hits me, I hit back
- _____ I sometimes feel like a powder keg ready to explode
- _____ Other people always seem to get the breaks
- _____ There are people who pushed me so far that we came to blows
- _____ I know that 'friends' talk about me behind my back
- _____ My friends say that I'm somewhat argumentative
- _____ Sometimes I fly off the handle for no good reason
- _____ I get into fights a little more than the average person

Your Personality

The items below inquire about what kind of person you think you are. Each item consists of a pair of characteristics, with the letters A-E in between. For example:

Not at all artistic A.....B.....C.....D.....E Very artistic

Each pair describes contradictory characteristics - you cannot be both at the same time, such as very artistic and not at all artistic.

The letters form a scale between two extremes. Choose a letter describing where you fall on the scale. For example, if you have no artistic interest, you might choose A. If you think you do, you might choose E. If neither of these describes you, you might choose a letter in between, and so forth.

| | | |
|------------------------|---------------------------|------------------|
| Not at all aggressive | A.....B.....C.....D.....E | Very aggressive |
| Not at all independent | A.....B.....C.....D.....E | Very independent |

| | | |
|---|---------------------------|--|
| Not at all emotional | A.....B.....C.....D.....E | Very emotional |
| Not at all submissive | A.....B.....C.....D.....E | Very submissive |
| Not at all excitable in a MAJOR crisis | A.....B.....C.....D.....E | Very excitable in a MAJOR crisis |
| Very passive | A.....B.....C.....D.....E | Very active |
| Not at all able to devote self completely to others | A.....B.....C.....D.....E | Able to devote self completely to others |
| Very rough | A.....B.....C.....D.....E | Very gentle |
| Not at all helpful to others | A.....B.....C.....D.....E | Very helpful to others |
| Not at all competitive | A.....B.....C.....D.....E | Very competitive |
| Very home oriented | A.....B.....C.....D.....E | Very worldly |
| Not at all kind | A.....B.....C.....D.....E | Very kind |
| Indifferent to others' approval | A.....B.....C.....D.....E | Highly needful of others' approval |
| Feelings not easily hurt | A.....B.....C.....D.....E | Feelings easily hurt |
| Not at all aware of others' feelings | A.....B.....C.....D.....E | Very aware of others' feelings |
| Can make decisions easily | A.....B.....C.....D.....E | Has difficulty making decisions |
| Gives up very easily | A.....B.....C.....D.....E | Never gives up easily |
| Never cries | A.....B.....C.....D.....E | Cries very easily |
| Not at all self-confident | A.....B.....C.....D.....E | Very self-confident |
| Feels very inferior | A.....B.....C.....D.....E | Feels very superior |
| Not at all understanding of others | A.....B.....C.....D.....E | Very understanding of others |
| Very cold in relations with others | A.....B.....C.....D.....E | Very warm in relations with others |
| Very little need for security | A.....B.....C.....D.....E | Very strong need for security |
| Goes to pieces under pressure | A.....B.....C.....D.....E | Stands up well under pressure |

We are all members of different groups, for many different reasons. We belong to some groups because of characteristics we share with other members - for example, being male or female. Even within these categories both men and women possess characteristics that many people identify as more typically male or female. These questions are intended to assess the extent to which you identify with males and females on different attributes.

Which gender group do you identify most strongly with?

Women 1 2 3 4 5 6 7 **Men**
 In terms of your attitudes, which group do you feel closest to? Use the scale below:
Women 1 2 3 4 5 6 7 **Men**

In terms of your priorities in life, which group do you feel closest to? Use the scale below:

Women 1 2 3 4 5 6 7 **Men**

In terms of the content of your friendships, which group do you feel closest to? Use the scale below:

Women 1 2 3 4 5 6 7 **Men**

In terms of your life experiences, which group do you feel closest to? Use the scale below:

Women 1 2 3 4 5 6 7 **Men**

ATTITUDES TOWARDS WOMEN SCALE

| The questions listed below are presented as statements of opinions. After you have read through each statement, circle a number that indicates the extent to which you agree or disagree with that statement. There are no right or wrong answers. | Strongly Disagree | | | | | | Strongly Agree | | |
|--|-------------------|---|---|---|---|---|----------------|--|--|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Swearing and obscenity are more repulsive in the speech of a woman than a man. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Under modern economic conditions with women being active outside the home, men should share in household tasks such as washing dishes and doing laundry. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| It is insulting to women to have the "obey" clause remain in the marriage service. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| A woman should be free as a man to propose marriage. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Women should worry less about their rights and more about becoming good wives and mothers. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Women should assume their rightful place in business and all the professions along with men. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| A woman should not expect to go to exactly the same places or to have quite the same freedom of action as a man. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| It is ridiculous for a woman to run a locomotive and for a man to darn socks. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| The intellectual leadership of a community should be largely in the hands of men. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Women should be given equal opportunity with men for apprenticeship in the various trades. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Women earning as much as their dates should bear equally the expense when they go out together. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Sons in a family should be given more encouragement to go to university than daughters. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| In general, the father should have greater authority than the mother in the bringing up of the children. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| Economic and social freedom is worth far more to women than acceptance of the ideal of femininity which has been set up by men. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| There are many jobs in which men should be given preference over women in being hired or promoted. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |

Background Information

We would like you to give us some background information. Please don't include any notes or information that could identify you!

Are you? (tick ☒ one) ☐ Female ☐ Male What is your age? _____

What is your nationality? _____ What group best describes your ethnic origins? _____

What is your marital (romantic) status? _____

Do you have a job at the moment? (tick ☒ one) ☐ Yes ☐ No

If you are working, what is your current occupation: _____

What is your highest level of education? (tick ☒ the appropriate box)

- ☐ Up to 5th form advanced trade certificate ☐ Up to 7th form ☐ Bachelors degree / trade certificate /
☐ Up to 6th form ☐ 1 year or more of study at a polytechnic/university
☐ Post graduate degree

Roughly, what is your rough household income? (tick ☒ the appropriate box)

- ☐ Up to \$20,000 ☐ \$20,000 to \$40,000 ☐ \$40,000 to \$60,000 ☐ \$60,000 to \$80,000 ☐ More than \$80,000

Roughly, what is your personal income? (tick ☒ the appropriate box)

- ☐ Up to \$20,000 ☐ \$20,000 to \$40,000 ☐ \$40,000 to \$60,000 ☐ \$60,000 to \$80,000 ☐ More than \$80,000

Thanks for participating