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## Mapping Alternative Masculinities: Development, Validation, and Latent Profile Analysis of a New Masculinity Measure

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A thesis submitted in partial fulfillment of the requirements for the degree in Master of Science

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## ABSTRACT

Prominent measures of masculinity focus on traditional masculine norms, such as high aggression, low emotional expression, and heteronormativity. However, recent qualitative research has indicated that a variety of men embrace alternative forms of masculinity that include unique characteristics not represented by traditional norms. I developed the Alternative Masculinity Measure (ALT-M) to address this gap. The ALT-M was designed to measure individual differences on constructs derived from a modern, socially progressive representation of masculinity. Concepts, scales, and items were developed primarily from readings of qualitative research on alternative masculinities. Nine dimensions with 14 items each was sent to 15 experts for content validity assessment. A final pool of 101 items distributed across 9 constructs (10 - 12 items per scale) was distributed to undergraduate males at Western University (N = 497). Participants also completed the Conformity to Masculine Norms Inventory (CMNI-46; Parent & Moradi, 2009), the Aggression Questionnaire (Buss & Perry, 1992), the Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF; Petrides, 2009) and the HEXACO Personality Inventory-short version (Ashton & Lee, 2009) for construct validation purposes. Item descriptive statistics and separate factor analyses were inspected for each construct to evaluate unidimensionality. One scale was removed due to its inability to adequately represent a homogeneous set of items. The other 8 scales displayed evidence of unidimensionality and were analysed together using a combination of Exploratory Structural Equation Model (ESEM) with a target rotation and CFA. Weak items, defined as items with loadings below .30 on their hypothesized scales or high loadings on other scales were removed one at a time using an iterative process. During this process, another full scale and multiple items were removed. In the end, I retained 7 scales with 6 items each, for a total of 42 items. All items load strongly on their scales (range .414 - .823) and have low cross-loadings on other scales. The seven remaining scales are labelled Homophilia, Emotional Openness, Cooperation, Avoidance of Physical Aggression, Reticence, Gender Egalitarian, and Intimacy Orientation. A higher order factor structure reveals all scales load significantly onto a latent “progressive masculinity” construct, loadings range from .506 to .771. Final CFA and ESEM models show good level of fit.

Average scores for the scales and full measure were created and compared to the scale and full measure scores of the CMNI, revealing a good level of convergent and discriminant validity. In order to evaluate the distinctiveness of the ALT-M from the CMNI, these two instruments were compared in terms of their relationships with the HEXACO, Aggression Questionnaire, and Emotional Intelligence Questionnaire. Strong evidence of construct distinctiveness is provided. Finally, a Latent Profile Analysis was conducted on the measure, revealing four unique masculinity profiles that differ in shape, ethnic composition, and trait aggression levels. Overall the ALT-M has sound psychometric properties and can be used to delineate multiple unique masculinities. It will benefit from future cross validation in terms of its factorial structure and profiles.

### **KEYWORDS**

Masculinity, Alternative Masculinities, Measure Development, Factor Analysis, Validity, Latent Profile Analysis

## ACKNOWLEDGEMENTS

First, I would like to thank my supervisor, Paul Tremblay. Paul, your encouragement, engagement with the content, and breadth of methodological knowledge profoundly helped to shape my work. Beyond that, your enthusiasm for learning and your boundless intellectual curiosity has been extremely formative for me as a researcher. I consider it a privilege to have worked under your supervision.

I would also like to thank my defence committee, Lynne Zarbatany, Don Saklofske, and Saad Chahine, for taking the time out of their busy schedules to consider my work and offer their thoughtful critiques. To my friends, Alexa Clerke and Sarah Babcock, you have made this whole experience a true pleasure. Your intelligence, passion, and friendship have offered me both comfort and inspiration. I want to thank Sarah in particular for her help on this project, for taking the time to read my rough drafts and help me talk through some of the trickier points. I also want to acknowledge my family, for the constant support they have offered and the unending confidence they have always had in me. Finally, I thank the first and last person I speak to every day, Graeme Bayliss. Thank you for your ceaseless support and constant offers to edit my drafts, even if I was too nervous to let you.

## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	ii
<b>ACKNOWLEDGEMENTS</b> .....	iv
<b>TABLE OF CONTENTS</b> .....	v
<b>LIST OF TABLES</b> .....	ix
<b>LIST OF FIGURES</b> .....	x
<b>LIST OF APPENDICES</b> .....	xi
<b>CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW</b> .....	1
<b>1.1 Introduction</b> .....	1
1.1.1 <b>Summary of the chapter.</b> .....	3
1.1.2 <b>Gender Role Strain Paradigm</b> .....	3
<b>1.2 Existing Masculinity Measures</b> .....	6
1.2.1 <b>Backgrounds and descriptions.</b> .....	7
1.2.2 <b>Methodological development.</b> .....	10
1.2.3 <b>Towards a new type of masculinity measure.</b> .....	12
<b>1.3 Developing Scales for a New Measure of Masculinity</b> .....	14
1.3.1 <b>Homophilia.</b> .....	15
1.3.2 <b>Pro-Femininity.</b> .....	16
1.3.3 <b>Freedom of emotional expression.</b> .....	16
1.3.4 <b>Interdependence.</b> .....	17
1.3.5 <b>Indifference towards status.</b> .....	17
1.3.6 <b>Self-restraint.</b> .....	18
1.3.7 <b>Diplomacy.</b> .....	18

1.3.8	<b>Gender egalitarian.</b>	19
1.3.9	<b>Attitudes towards sex and intimacy.</b>	19
1.4	<b>Preliminary Mapping of Multiple Masculinities</b>	20
1.5	<b>The Current Study</b>	22
<b>CHAPTER 2: METHODS</b>		24
2.1	<b>Participants</b>	24
2.2	<b>Construction of the Alternative Masculinity Measure</b>	24
2.2.1	<b>Selection of the constructs to assess.</b>	24
2.2.2	<b>Defining the constructs and delineating their content domain.</b>	25
2.2.3	<b>Developing the item pool.</b>	26
2.2.4	<b>Establishing and evaluating content validity.</b>	26
2.2.5	<b>Initial item pool.</b>	27
2.3	<b>Additional Materials</b>	27
2.4	<b>Procedures</b>	29
2.5	<b>Analyses</b>	29
2.5.1	<b>Preliminary item analyses.</b>	31
2.5.2	<b>Item selection, scale refinement, and measure finalization.</b>	31
2.5.3	<b>Validity analyses.</b>	32
2.5.4	<b>Latent profile analysis.</b>	32
<b>CHAPTER 3: MEASUREMENT MODEL</b>		34
3.1	<b>Data Inspection</b>	34

3.2 Unidimensionality of Individual Scales .....	34
3.2.1 Homophilia EFA. ....	35
3.2.2 Attitudes towards sex and intimacy EFA. ....	35
3.2.3 Diplomacy EFA. ....	36
3.2.4 Freedom of emotional expression EFA. ....	36
3.2.5 Gender egalitarian EFA. ....	36
3.2.6 Indifference towards status EFA. ....	36
3.2.7 Interdependence EFA. ....	37
3.2.8 Pro-Femininity EFA. ....	37
3.2.9 Self-restraint EFA. ....	37
3.2.10 Summary. ....	38
3.3 Item Analysis and Scale Refinement using ESEM .....	38
3.4 Final Scale Properties and CFA Analysis .....	44
3.5 Renaming and Redefining the Scales .....	49
<b>CHAPTER 4: VALIDITY AND LATENT PROFILE ANALYSIS .....</b>	<b>51</b>
4.1 Data Inspection .....	51
4.2 Convergent and Discriminant Validity .....	51
4.3 Construct Distinction .....	53
4.4 Latent Profile Analysis .....	58
4.4.1 Digging deeper into the meaning of the profiles. ....	63
<b>CHAPTER 5: DISCUSSION .....</b>	<b>67</b>
5.1 Evaluating the Project Objectives .....	67
5.2 Strengths and Weaknesses .....	70

<b>5.3 Implications</b> .....	73
<b>5.4 Future Directions</b> .....	77
<b>REFERENCES</b> .....	80
<b>APPENDICES</b> .....	87
<b>CURRICULUM VITAE</b> .....	103



## LIST OF TABLES

Table 1: <i>Common themes from prominent masculinity measures</i> .....	13
Table 2: <i>Model fit of ESEM</i> .....	41
Table 3: <i>Factor loadings (including cross-loadings) of final ESEM</i> .....	42
Table 4: <i>Correlations of scales in final ESEM</i> .....	44
Table 5: <i>Model fit of CFAs</i> .....	45
Table 6: <i>Standardized factor loadings for final CFA</i> .....	46
Table 7: <i>Internal Consistencies for final measurement model</i> .....	47
Table 8: <i>Correlations of latent variables</i> .....	48
Table 9: <i>Factor loadings of higher order CFA</i> .....	49
Table 10: <i>Correlation matrix showing convergent and discriminant validity of the ALT-M</i> .....	52
Table 11: <i>HEXACO correlations and partial correlations with ALT-M and CMNI</i> .....	54
Table 12: <i>TEIQue correlations and partial correlations with ALT-M and CMNI</i> .....	56
Table 13: <i>Aggression Questionnaire correlations and partial correlations with ALT-M and CMNI</i> .....	57
Table 14: <i>Latent Profile Analyses</i> .....	59
Table 15: <i>Proportions within masculinity profiles for five ethnic groups</i> .....	63
Table 16: <i>Average scores on Aggression Questionnaire</i> .....	65

## LIST OF FIGURES

<i>Figure 1: Standardized scale scores for four-profile solution.....</i>	<b>60</b>
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## LIST OF APPENDICES

Appendix A: Demographics of sample .....	87
Appendix B: Definitions of high and low scores on the original ALT-M .....	88
Appendix C: Form for content validity analysis .....	90
Appendix D: Original list of items for ALT-M .....	96
Appendix E: Ethics Approval .....	99
Appendix F: Items removed during EFA analyses .....	100
Appendix G: Items removed during first round of ESEM .....	101

## CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

### 1.1 Introduction

Masculinity, at its simplest definition, is the set of attributes, roles, and norms associated with boys and men. Describing it as a “set” suggests the inclusion of a number of facets. In the literature on masculinity, determining what these facets are has been a central line of inquiry. Researchers who focus on masculine norms are typically from the social constructionist tradition, which presents a complex and often dynamic picture of masculinity, arguing that not one, but multiple masculinities exist. Masculinity is thought to vary as a result of differences in such things as culture, ethnicity, sexual orientation, and political affiliation, and distinct masculinities, as defined by their particular set of attributes, are thought to abound throughout the world.

Despite this assumed variability, the only form of masculinity that is represented in the measurement literature is *Traditional Masculinity* which encompasses the dominant set of masculine norms in a given society. Put another way, traditional masculinity is what the majority of individuals within a certain culture or country think of when they think of “masculinity”. The most commonly studied traditional masculinity is Western (i.e. American, Canadian, English, etc.) masculinity, though there has been some exploration of the traditional masculinities of different cultural groups or countries, such as Latin-American (Arciniega, Anderson, Tovar-Blank & Tracey, 2008), South African (Luyt, 2005), and Russian (Janey et al., 2013).

The focus on traditional masculinity with Western and other cultural groups is not only due to its dominance and pervasiveness, but also because of its relationship with particular social and individual problems. For instance, conformity to traditional western

masculinity has been firmly associated with a range of negative outcomes in men, such as psychological distress, health-risk behaviours, aggression, and intimate-partner abuse (Addis, Reigeluth, & Schwab, 2016). This is not to say that all of the components that make up all forms of traditional masculinity are inherently bad. Rather, at least some of the attributes typically associated with traditional masculinities, such as a propensity for violence, an unwillingness to share or express emotions, and a desire to have control over women, can have serious negative consequences.

Yet, for all we've learned about the potential perils of traditional masculine norms, we know very little about the extent to which alternative non-traditional forms of masculinity exist. To the extent that alternative masculinities exist, it would be an unfortunate oversight to ignore them because knowing more about them might help us mitigate some of the negative outcomes related to traditional masculinity. For example, if an alternative masculinity has a significantly lower association with violent behaviour than a traditional masculinity, and if masculinity itself is largely a learned social construct, then that alternative masculinity might offer some insights into how violent behaviour could be prevented or curtailed in men.

Thus, the primary objective of this project was to define and investigate non-traditional alternative forms of masculinity. This was done in two major steps: 1) developing and validating a new measure of alternative masculinity, and 2) investigating this alternative masculinity and its set of attributes to determine if it was distinct from traditional masculinity, and further, to see if it could be used to present not one, but multiple forms of alternative masculinity.

**1.1.1 Summary of the chapter.** This chapter will begin by offering an overview of the Gender Role Strain Paradigm (GRSP), which permeates the literature on masculinity measurement. Next, a background on existing masculinity measures which fall within the GRSP will be provided, discussing what they measure and how they were developed. This section will include a discussion on how existing masculinity measures contributed to the development of my own measure and outline some of the differences between them. The subsequent section will briefly discuss the set of attributes that I discovered within the qualitative literature on non-traditional masculinities and how they will be presented in my measure of alternative masculinity. Then, some preliminary work that has been done to empirically explore multiple masculinities will be presented. Finally, I will introduce the major hypotheses for the project.

## **1.2 Gender Role Strain Paradigm**

The study of men and masculinity in psychology was born out of the Feminist movement in the early 1970s, when gender emerged as a serious point of academic discussion (Wong & Wester, 2016). A little over forty years later, in 2016, the *APA Handbook of Men and Masculinities* was published, emphasizing the plurality of masculinities in its title, and solidifying the study of masculinity as a major field within psychological research. Great importance has been placed on understanding the exact roles, attitudes, and behaviours that make up masculinity in order to better understand the influence of gender on our daily lives.

Prior to the emergence of the Gender Role Strain Paradigm (GRSP), academic and social conceptions of masculinity took an essentialist approach, describing masculinity as a group of biological and/or psychological traits naturally inherent to

men. Ideal manhood was considered active, rational, and strong, and masculinity and femininity were considered polar opposites. Pleck (1982) refers to this as the Male Sex Role Identity (MRSI) paradigm. Within this paradigm, the establishment of a sex role identity was considered central to healthy psychological development and the failure of men to achieve a masculine sex role identity was considered highly problematic.

Pleck argues that the emergence of androgyny as a psychologically important gender concept in the late 1960s was an important transitional point in how masculinity was understood. In the early 1970s, Sandra Bem argued that masculinity and femininity do not exist along the same spectrum and that they should not be defined as polar opposites of one another, but rather as two independent constructs. Up to that point, masculinity-femininity scales were scored in such a way that if an individual scored high on masculinity, they by default scored low on femininity. But Bem developed a new measure, the Bem Sex Role Inventory (BSRI; Bem, 1974), based on the assumption that masculinity and femininity were independent. The original intent of this scale was to show that masculinity and femininity were indeed distinct concepts, and to measure psychological androgyny, which was defined as someone who is both masculine and feminine. In this new paradigm, being hyper-masculine (or hyper-feminine) is considered problematic and likely to produce a highly limited individual, while being androgynous would produce a more well-rounded individual.

Bem's work helped shift the direction of masculinity research by setting the precedent for understanding masculinity as a construct that though correlated with femininity, is nevertheless independent, which has since been confirmed through factor analysis of the BSRI (Blanchard-Fields, Suhrer-Roussel, & Hertzog, 1994; Gaudreau,

1977). The problem that Pleck and other masculinity researchers had with the BSRI was that it defined masculinity (and femininity) as simply personality traits, thereby oversimplifying the construct of gender identity (Ashmore, 1990). Thus, future work on masculinity would build upon Bem's work by retaining masculinity as an independent construct, but they would move away from it by shifting their focus towards the social construction of masculinity.

Pleck (1982) referred to this new approach to masculinity as the Gender Role Strain Paradigm (GRSP). GRSP sprang from the "same philosophical roots" as social constructionism, in the sense that it describes masculinity as a relational quality that is largely learned from one's particular social and cultural environment and as something which is subject to change (Levant & Pollack, 1995, p. 3). In the previous paradigm, masculinity was considered a trait, and not adequately filling out the trait was considered a developmental failing of the individual. Within the new paradigm, masculinity is thought to be socially constructed, and not filling out the appropriate gender role is still considered problematic, though the onus for the problem is more on society than on the individual.

Inherent to GRSP is the idea of gender roles, the set of behaviors and characteristics that are considered typical (i.e. stereotypes) or desirable (i.e. norms) of men and women. According to GRSP, these gender roles are contradictory and inconsistent and many individuals violate them. Yet, despite the prevalence of violators, violating these roles leads to negative social and psychological consequences, especially for men. Further, the roles themselves have certain dysfunctional dimensions, so both violating and not violating these roles can have negative consequences. For example, not



adequately representing the traditional male role can cause a man to be ostracized socially, but on the other hand, adhering perfectly to the male role can lead to some of the negative consequences mentioned above, such as increased risk of intimate-partner abuse.

Another central component to GRSP is the idea of Masculinity Ideology, which was originally defined as one's belief in the importance of men adhering to culturally defined standards for male behaviour (Pleck, 1995; Thompson & Pleck, 1995). Thus, an individual with a strong masculinity ideology would believe that it is very important for men to adhere to traditional standards of masculinity. The extent to which individuals believe that men in general *should* ascribe to traditional norms (i.e., the strength of their masculinity ideology) is what most measures of masculinity are intended to capture.

### **1.3 Existing Masculinity Measures**

The normative gender role approach to masculinity based on GRSP argues that masculinity is a complex construct that can be assessed quantitatively through well-developed measures. As discussed, the Bem Sex Role Inventory (BSRI) changed the understanding of masculinity so that it is now widely understood to be an independent construct, rather than one end of a masculinity-femininity spectrum. Since its introduction, several measures of masculinity have been developed. Unlike the BSRI, these measures treat masculinity as a multidimensional construct rather than a set of distinct personality traits. Typically, these measures all adhere to GRSP and assess individual differences in traditional masculinity ideology. This section will present the most prominent masculinity measures, outlining their purpose and psychometric

characteristics, and discussing how they helped inform the development of my own measure.

**1.3.1 Backgrounds and descriptions.** The most commonly used masculinity measures are focused on “traditional” masculine values and behaviours, such as toughness, emotional control, and a willingness to take risks. Despite the expected variability of masculinity espoused by GRSP, masculinity measures are fairly homogenous. In fact, several prominent measures borrow from the same pool of items, many of which can be traced back to the first measure that presented masculinity as a multidimensional social construct, the Brannon Masculinity Scale (BMS; Brannon & Juni, 1984). The purpose of the BMS was to capture individual men’s endorsement of traditional masculine norms. The developers grouped these norms into seven categories: Avoiding Femininity, Concealing Emotions, Being a Breadwinner, Being Admired and Respected, Toughness, Being a “Male Machine”, and Violence and Adventure.

Thompson and Pleck (1986) developed the Male Role Norms Scale (MRNS), essentially a shorter version of the BMS. The MRNS was grounded in GRSP, which the developers thought had been adequately captured by the BMS. As a result, they did not create any of their own items but simply developed a short form of the BMS. The MRNS was factor analyzed, resulting in three dimensions: Status, Toughness, and Anti-Femininity. A version of the MRNS was later developed for adolescents, the Male Role Attitude Scale (MRAS; Pleck, Sunenstein, & Ku, 1994). The MRAS is a further short form, this time of the MRNS, but the items were re-worded to make them age-appropriate, and an additional item about sexuality is also included. Unlike the previous measures, it is not multidimensional and consists of only a single factor.

The Masculinity Role Norms Inventory (MRNI; Levant et al., 1992) was next, and its revised edition remains one of the most commonly used measures in masculinity research. The development of this scale retained some of the items and thematic norms captured in the BMS and MRNS, but some adjustments were made, including the addition of normative facets related to sex and sexuality. Like the previous measures, it focused on assessing individual differences in masculinity ideology and was theoretically grounded in GRSP. The scales in the revised edition (MRNI-r) are: Self Reliance Through Mechanical Skills, Negativity Towards Sexual Minorities, Importance of Sex, Toughness, Dominance, Avoidance of Femininity, and Restrictive Emotionality (MRNI-r; Levant et al., 2007; Levant, Rankin, Williams, Smalley, & Hasan, 2010). An adolescent version of the MRNI was also developed (MRNI-A; Levant, Graef, Smalley, Williams, McMillan, 2008) and subsequently revised (MRNI-A-r; Levant et al., 2012). The adolescent version takes its items from the original but they are altered to simplify the language, making it more age appropriate. Factor analysis of the revised edition revealed three factors: Emotionally Detached Dominance, Toughness, and Avoidance of Femininity.

The Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003) is conceptually similar yet distinct from the MRNI and other common masculinity measures. Unlike many of the previously mentioned measures, the developers generated their own list of masculine norms, expanding the number to 11. And, rather than focus on individuals' masculine ideologies (which can be held by both women and men and is captured by *should* statements), the CMNI captures men's individual masculine *beliefs*. Masculinity beliefs was a term proposed a decade after the development of the CMNI by

Thompson and Bennett (2015), but its definition perfectly represents the intent of the CMNI. Masculinity beliefs are the extent to which a man has internalized traditional conceptions of masculinity. As such, the CMNI does not use *should* statements, because it is not interested in general masculinity ideology, but rather it uses *I* statements, because it is interested in the extent to which an individual has internalized, or at least conforms, to masculine norms.

While the distinction between an individual's masculinity ideology (belief in how men should be) and their conformity to masculine norms may not seem that pronounced, the MRNI-r and CMNI do show discriminant validity, demonstrating that they are sensitive to this difference (Levant, Hall, Weigold, & McCurdy, 2015). The original CMNI captures the extent to which individuals conform to the following masculine norms: Winning, Emotional Control, Risk-Taking, Violence, Power Over Women, Dominance, Playboy, Self-Reliance, Primacy of Work, Disdain for Homosexuals, and Pursuit of Status.

Several other measures of masculinity ideology exist, specifically those that Thompson and Bennett (2015) refer to as Second Generation masculinity measures. These measures focus on the traditional masculinities of specific geographical or cultural groups, such as Latino (Machismo Measure; Arciniega et al., 2008) or Jamaican men (Macho Scale; Anderson, 2012). One example that relied heavily on the original masculinity measures used for Western masculinity ideology is the Male Attitude Norms Inventory, originally developed in 2001 (MANI; Luyt & Foster, 2001) and revised four years later (MANI-II; Luyt, 2005). It was developed for men in South Africa, particularly those who engaged in gang culture. Its items were predominately taken from the MRNI

and MRNS, but re-worded to better reflect South African language and culture. Like the other measures, high scores represent agreement with traditional conceptualizations of masculinity. The revision did involve some reconceptualising and used qualitative research to produce its own set of norms, rather than simply borrowing from others. The revised edition consists of three dimensions: toughness (both emotional and physical), control, and sexuality (both heterosexism and sexual behaviour).

Despite the expansion of masculinity measurement into new cultural groups that weren't covered in the original generation of measures, the focus of this new generation is rooted in the *traditional* masculinities of different groups. Few measures exist that attempt to capture the variability of masculinity within a defined group. Given the broadness of the groups under discussion, for example Latino Men and White Western Men, a focus on different traditional masculinities still only captures a portion of the masculinity variability that exists.

**1.3.2 Methodological development.** Unlike their content, the psychometric quality of the masculinity measures has been quite variable. Some, like the CMNI and the revised version of the MRNI-A have fairly strong test qualities, while others, like the MRNS and original MRNI are psychometrically weak.

The information available regarding the development of the MRNS is limited, but it was created by conducting a principal components analysis on 57 items from the BMS (Thompson et al., 1986). The MRAS (the adolescent version of the MRNS) had especially poor psychometric development. A handful of items were chosen and adjusted from the MRNS and then only the internal consistency of these items was assessed and

determined to be quite low ( $\alpha = .56$ ). A factor analysis did not reveal multidimensionality but no further assessments were made (Pleck et al., 1994).

The subscale structure of the original MRNI was never supported by factor analysis, so it was revised in 2007, and the factor structure of the revised edition was assessed in 2010, almost 20 years after its original development (Levant et al., 2007 & 2010). A principal axis factor solution with Oblimin rotation was conducted on the revised edition and seven factors with eigenvalues above 1 (the criterion the authors used to determine the number of factors) were found. Items that loaded below .35 on their intended scale or that loaded on a theoretically unintended scale were removed. For the MRNI-A-r, on the other hand, the developers used parallel analysis to determine the number of factors to extract from their list of items. They then used principal axis factor analysis, specifying four factors, using a Promax rotation with Kaiser normalization (Levant et al., 2012). They removed several items for loading too low on their primary factors or for having substantial cross loadings, and in the end the fourth factor was deemed no longer viable, and so they retained a three-factor solution.

The CMNI is by far the most well-developed and psychometrically robust masculinity measure of those discussed so far. Its items and scales were developed through extensive focus groups and interviews (rather than taken from previous measures) and it has been extensively validated. Like the MRNI-r, it was factor analyzed using principal-axis extraction with an oblique rotation. Items loading below .40 on their intended scale or with a cross loading above .30 were removed, and only items theoretically proposed to belong together were kept on their intended scales (Mahalik et al., 2003). While its development and continued validation have been quite rigorous, it is

important that future masculinity measures follow a similar or even stricter approach to their psychometric development. In addition, for a socially constructed phenomenon such as masculinity that is theorized to change with time and by context, it is important to continually generate new measures that capture new attributes as they evolve across generations or as they are represented by different groups.

**1.3.3 Towards a new type of masculinity measure.** Although I used these important measures to inform the development of my own measure, mine differs in three major ways: 1) rather than capturing traditional western masculinity, mine captures an alternative form of western masculinity (to be outlined in section 1.4); 2) it assesses individual differences in men's masculine attitudes, beliefs and behaviours; 3) I used a new and more rigorous approach for its psychometric development.

The six masculinity measures discussed in some detail above can be found in Table 1, which lays out the constructs common to them. As can be seen, common themes include: being emotionally tough or prizing emotional control; a propensity or respect for violence and physical toughness; dominance/control over others and situations; a willingness or tendency to take risks; homophobia or a concern regarding heterosexual presentation; anti-femininity or avoidance of feminine activities and behaviours; self-reliance; a desire for status; and having a “playboy” attitude towards sex and relationships.

These themes represent the set of attributes, roles, and norms that define traditional masculinity. The alternative form of masculinity that I developed might appear to be simply inversions of these traditional scales (e.g., going from anti-femininity to pro-femininity), but my new measure broadens and updates the content of the hypothesized

concepts and assesses men's attitudes, beliefs, and behaviours rather than just their masculinity ideology or masculinity beliefs.

Table 1.

*Common themes from prominent masculinity measures*

Theme/Measure	CMNI	MRNI-R	MRNS	MANI-II	MRNI-A-r
Emotional Control	✓	✓	✓	✓	✓
or toughness					
Violence or	✓	✓	✓	✓	✓
Physical toughness					
Dominance	✓	✓		✓	✓
Risk Taking	✓		✓	✓	✓
Homophobia/ Heterosexism	✓	✓		✓	
Anti-Femininity	✓	✓		✓	✓
Self-Reliance	✓	✓		✓	✓
Status	✓		✓	✓	
Sexuality	✓	✓		✓	

Note: Not all scales from the above measures were included. Dimensions of winning, power over women, primacy of work, constant effort, and social teasing were not included as they occurred only on less than 3 of the above measures.

As mentioned, the facets that represent my measure can be partly defined in terms of their opposition to the components of traditional masculinity. As can be seen from Table 1, the one measure that includes all of the represented traditional norms is the CMNI. As such, the CMNI will play an important role in this project as both a form of validation and as a means of ensuring construct distinctiveness, i.e. showing that my measure is not simply an inversion of the CMNI but indeed captures something distinct. This distinction is most apparent in the items included in each scale, as they underscore a broader conception of masculinity than typically represented in masculinity measures.



Finally, my measure is distinct in terms of its construction. Though not all of the measures mentioned had poor psychometric quality, even those that were more soundly developed followed fairly standard approaches of using a single EFA followed by validation work. I applied a relatively new technique called Exploratory Structural Equation Modeling (ESEM) in combination with EFA and CFA, a procedure that more easily identifies problematic items. More importantly, my item development and analyses prior to this analytic work proceeded in multiple iterations, including a content validity study. More on this approach will be discussed in Chapter 2 on methods.

#### **1.4 Developing Scales for a New Measure of Masculinity**

Evidence for the existence of alternative masculinities that are distinct from traditional masculinities, can be found in the qualitative literature. Several observational studies, ethnographies, interviews, and focus groups revealed some common patterns in terms of boys and men resisting traditional masculine norms. For the most part, this resistance often fell in line with progressive ideas about gender roles, homosexuality, and gender equality. Such findings also fell in line with discussions found in non-academic settings regarding the gender roles prescribed and proscribed for boys and men in our society. Some examples include the book *Guyland* by Michael Kimmel and his TED talk on masculinity, The Representation Project, including their documentary *The Mask You Live In*, articles posted on The Good Men Project, and various content from The White Ribbon Campaign and Men Engage websites.

At the same time, media stories that warn about the negative impact traditional masculine ideals can have on men and society have also been sprouting up, especially in reference to male unemployment and the rise of the alt-right in America. All at once, it

seems small pockets of men, researchers, activists, and pundits are interested in masculinity, particularly its capacity to change. These sources suggest that a modern, progressive form of masculinity that is partly defined by its resistance to traditional masculine norms is slowly growing legs in our society. The current section will lay out the facets that I propose encompass this alternative progressive masculinity and that represent the scales of my new measure. The constructs are an original compilation developed from an organization of common or similar themes from both the qualitative and quantitative literature on masculinity.

**1.4.1 Homophilia.** In the measures of traditional masculinity, a common theme relates to heterosexuality and/or homophobia. This is usually represented by items that directly express a disdain for gay men or, more passively, in the avoidance of language and behaviour that might be perceived as gay. In contrast, the qualitative literature holds several examples of heterosexual men acting in ways that exemplify a feeling of homophilia, or an acceptance of gay men and their community as well as a lessened concern about appearing heterosexual. Clear examples of straight men accepting gay men as friends, neighbours, and co-workers, not being concerned about being perceived as gay, and even speaking out against homophobia and stigmatizing it in their own social groups persist (Anderson, 2009; Dean, 2013; Anderson & McGuire, 2010; Jarvis, 2015; McCormack, 2011). As such, a progressive masculinity would likely contain a facet directly related to feelings of acceptance and comfort related to gay men and their community.

**1.4.2 Pro-Femininity.** Though masculinity is considered its own construct, independent of femininity, traditional views of masculinity commonly include a

component related to anti-femininity. This often presents as an avoidance of language or behaviour that might be perceived as feminine or a dislike of boys and men displaying feminine behaviour. However, progressive conceptions of masculinity tend to accept femininity or engagement in stereotypically feminine activities as a positive quality in men. This includes taking on jobs in service sectors, like customer service or hair dressing, taking on more responsibilities around the house, especially cooking, and being generally accepting of boys and men behaving in more feminized ways (Bartholomaeus, 2012; McCormack 2011; Sloan, Gough, & Conner, 2010; Roberts, 2012). Thus, an aspect of pro-femininity may be an important component in progressive masculinity.

**1.4.3 Freedom of emotional expression.** One of the most widely-held ideas about traditional masculinity is that males are both inherently not as emotional as females and, if they do (unnaturally) feel emotions, they should hold them back. This idea that emotional strength or a certain emotional coldness is a highly valued masculine virtue is present in all the measures of traditional masculinity discussed above. Sadness and fear are synonymous with weakness and the only appropriate “emotion” is anger. Contrary to this, a very central component of progressive masculinity is to contradict this notion head on by acknowledging that men do in fact have a wide range of emotions and supporting their need to express them in ways that don’t involve violence. Examples of men strongly believing in the importance of having strong emotional support in their lives and offering it to others, viewing emotions as positive rather than negative things, and desiring and/or having emotionally open relationships with other men are quite common in the literature (Robinson & Hockey, 2011; Emslie, Ridge, Ziebland, & Hunt, 2006; Way et al., 2014; McCormack, 2011).

**1.4.4 Interdependence.** The idea of both domination and independence/self-reliance are common values within traditional masculinities. These constructs are sometimes separate, as within the CMNI, and sometimes exist under the same umbrella, as within the MANI-II. The concept is somewhat similar to the value of Power and Self-Direction in the Schwartz Values (Schwartz, 1992). On the progressive side is a concept that is more similar to the Schwartz value of Universalism, where cooperation, equality, and support are valued above dominance, competition, and a resistance to accept help. In the qualitative literature this is exemplified by men intentionally avoiding domineering behaviour and language (Anderson, 2009), building relations that focus on similarity, respect, equality, and cooperation (Duncanson, 2015; Swain, 2006), viewing social fluidity and an ability to get along with others as an asset (McCormack, 2011), and believing it is acceptable, even important, for men to seek support when necessary (Robinson & Hockey, 2011). Thus, a progressive masculinity would likely include a construct which values cooperation and helping others over dominance and where caring for others and seeking and giving help is an asset.

**1.4.5 Indifference towards status.** A less universal but still prominent attribute associated with traditional masculinity is a preoccupation with status. This can take the form of social or professional status, such as having a well-paying and/or well respected job, or it can take on a more materialistic bent, where physical objects, such as cars and watches, are used as symbols to display one's wealth and importance. On the progressive end of this spectrum there exists a more laid back attitude regarding one's social presentation, where, for example, men don't over identify with their job or career (Harrington, Van Deusen & Humberd, 2011). Examples of male social groups conferring

high status to those who are personable, friendly, and charismatic, rather than to those who are wealthy also occur (McCormack, 2011). One quality of this progressive masculinity may therefore be a disinterest in status (Swain, 2006), professionally or materially, whereby such things are not central to one's sense of self-worth.

**1.4.6 Self restraint.** One of the common themes in the traditional measures that is perhaps not as colloquially prominent as some of the other constructs is risk-taking. This construct suggests that men should not only be willing to place themselves into dangerous situations, but that they should also enjoy the thrill of taking risks. The notion of risk-taking can be viewed as self-sacrificing, such as joining the army or putting oneself in danger to protect women and children, as self-serving, such as making a bold career move, or as simply a way to impress others. On the progressive end, risk-taking is not viewed as a necessity in terms of "proving" one's masculinity (Anderson et al., 2010). Rather, a man who shows self-restraint and by contrast to the traditional norm is mostly cautious and disciplined (Harrington et al., 2011), may fall within this new notion of masculinity.

**1.4.7 Diplomacy.** Another traditional norm that form most stereotypical ideas of masculinity is that of violence or aggression. Several of the measures include scales and items that suggest men should always be willing to fight and should know how to fight if and when the occasion arises. Violence is deemed acceptable, especially if it is for self-defence, but also as a means of protecting one's honour. In addition to this idea of toughness, men should be able to hide their physical pain, which is similar to value of emotional stoicism. Progressive ideas of masculinity would take the exact opposite approach, where aggression would not be considered a reasonable or an acceptable

behaviour regardless of the context and where men who use such actions would be looked down upon (McCormack, 2011; Bartholomaeus, 2012; Goicolea, Coe, & Ohman, 2014). Further, as the title of the construct suggests, the facet contains more than just avoiding aggression and also involves taking steps to prevent it when possible.

**1.4.8 Gender egalitarian.** Sexist or misogynistic attitudes are also common to traditional notions of masculinity. These can take more passive forms, as discussed in relation to the anti-femininity construct, or more active forms, where men support anti-feminist or anti-women agendas and believe in the superiority of men over women, often for the formers greater ability to rationalize and lead. However, examples of men taking up a feminist or gender egalitarian mantle abound in popular culture and in the qualitative literature. Examples of men condemning or speaking out against misogyny and sexism, having mutually platonic relationships with females, and actively expressing pro-feminist attitudes are common (Anderson et al., 2010; Goicolea, Coe & Ohman, 2014; Isacco, 2015; and Johansson & Ottemo, 2013). Thus, an important component of this progressive masculinity would likely be a feminist or gender egalitarian attitude.

**1.4.9 Attitudes towards sex and intimacy.** The final construct that the qualitative literature indicates may be an important component of progressive masculinity is an opposition to the play boy attitude. This traditional attitude assumes that men have an insatiable sex drive and men should want, and be able to acquire, multiple sexual partners. In this view, sex is a purely physical act and a high number of sexual partners is proof of manhood. The progressive view of this construct is to frame sex in more relational terms, where relationships are valued over promiscuity and emotional intimacy

and respect are more important than simply “collecting” multiple sexual partners (Clarke, Marks & Lykins, 2015).

### **1.5 Preliminary Mapping of Multiple Masculinities.**

A central component to GRSP, and hence masculinity research more broadly, is the idea that masculinity is variable, and that ideal masculine characteristics change between times (i.e. generations), places, and even among social and cultural groups, making masculine norms and ideologies relative concepts (Addis, Reigeluth, & Schwab, 2016). Though frequently discussed by masculinity researchers, the multiplicity of masculinities and alternative forms of masculinity are rarely empirically charted. As the previous section showed, qualitative research has found some rich examples of men actively resisting masculine norms and espousing alternative views of masculinity. However, there has been little quantitative work to support the claim that clearly distinguishable, individualized masculinities exist.

One clear way to capture the multiplicity of masculinities is through Latent Profile Analysis (LPA) when the variables are continuous or Latent Class Analysis (LCA) when variables are ordinal. Unlike Confirmatory Factor Analysis (CFA) and other variable-centered modeling approaches, LPA is a person-centred approach (Masyn, 2003). LPA is therefore ideal for capturing meaningful groups of participants who have similar response patterns or profiles across a set of questionnaire subscales. LPA produces a latent categorical variable where its categories are referred to as profiles or classes. Each profile accounts for specific patterns of responses on the observed variables, and participants are grouped into their most likely profile. Like CFA, where an individual’s factor score is thought to explain their individual item scores for that

particular factor, the most likely profile for a person is thought to explain their responses across the subscales of the whole measure.

LPA is a valuable quantitative procedure for validating alternative masculinities that, to my knowledge, has only been used in three studies on masculinity. One of the studies identified subgroups of men in distinct phases of their “Gender Role Journey” (McDermott & Schwartz, 2013) and the other identified subgroups of men who were at risk for sexual aggression, which labeled one of the groups “hostile masculinity” (Logan-Greene & Davis, 2011). Despite these studies being related to masculinity, only the third study actually produced distinct masculinity profiles.

This third study found four distinct masculinity profiles using Latent Class Analysis, a version of LPA used when the variables are ordinal (Casey et al., 2015). The researchers did not use any of the common masculinity measures but rather a combination of measures focused on sexual attitudes and behaviours, attitudes towards women, and engagement in male-orientated activities. They derived four distinct classes which they named: Normative, Normative/Male Activities, Misogynistic, and Sex-Focused. Each of these classes represents a distinct form of masculinity as conceptualized by the authors with a strong focus on sexuality and negative attitudes about women, as can be inferred from their titles. The authors also compared these subgroups in terms of their demographic characteristics and other related outcomes, such as STD diagnosis and substance use.

These examples of distinct masculine subgroups provide promising preliminary quantitative evidence for the existence of distinct masculinities. Given the importance of their existence to current theoretical understandings of masculinity, it is surprising that



more research has not been done to clearly identify and describe multiple masculinities, but at the same time, it is recognized that LPA techniques are just beginning to be applied in certain fields. In the spirit of promoting this line of research and cementing the existence of multiple masculinities, an important component of this project will be to use LPA to delineate clear subgroups of masculinity that exist within the masculinity conceptualized by my measure.

### **1.6 The Current Study**

The purpose of this study is to provide quantitative access to a non-traditional form of masculinity and to use that access to explore the existence of multiple masculinities. This was done by the building of a new masculinity measure, developed to capture a modern-day liberal or progressive form of masculinity. This measure is titled the Alternative Masculinity Measure (ALT-M). The building of the ALT-M followed a very rigorous process including careful generation of an item pool, a content validity analysis, and a multistep item analysis presented in Chapter 2. In addition to validating this measure through common avenues (i.e. providing evidence of factorial structure, and convergent and discriminant validity), it was also used to identify distinct profiles of alternative masculinities.

Recently, calls to identify what non-traditional masculinities involve have been made, to show, for example, whether they are simply polar opposites of traditional ideologies or whether they involve different combinations of attitudes and beliefs (Cuthbert, 2015). My project will thus provide a tool that can be used for detailed exploration of a progressive alternative masculinity *and* broaden our current knowledge of alternative masculinities that may be related to this progressive ideology.

The major hypotheses for my project are as follows:

- 1) The concepts that I have proposed for scales in section 1.4 will be revealed to a large extent through a combination of factor analytic techniques. At the same time, it is expected that some modifications will be required, but it will be possible to select a subset of the best items.
- 2) This measure will show evidence of convergent and discriminant validity when correlated with specific hypothesized scales of the CMNI. Higher (convergent) correlations are expected with specific CMNI scales, while other correlations with the other CMNI scales are expected to be much lower (discriminant correlations).
- 3) The new measure will show construct distinctiveness with the CMNI, through an incremental validity analysis in which concurrent validity indices will be calculated between ALT-M and criterion variables, partialling out the influence of the theoretically linked CMNI scales.
- 4) The new measure will be able to produce unique masculinity profiles that represent alternative forms of masculinity. No specific hypotheses are postulated regarding these profiles given the novelty of this area. Ideally the profiles will show not only scatter or elevation differences but shape differences as well.
- 5) These masculinity profiles will be differentially related to external variables, such as demographic factors and levels of aggression.

## CHAPTER 2: METHODS

### 2.1 Participants

Participants in this study were 497 male students completing undergraduate studies at a university in South-Western Ontario. Participants were mostly first year students (91.8%) with ages ranging from 16 to 43,  $M = 18.34$  ( $SD = 4.60$ ). The vast majority of participants identified as straight (95.8%) and 1% identified as gay, 2.6% as bisexual, 0.20% as pansexual, and 0.40% as asexual. Forty-three percent identified as Caucasian, 21.5% as Chinese, 15% as South Asian, 6% as Filipino, 4.8% as Korean, 3.8% as Arab, 2.2% as Black, 2.2% as Southeast Asian, 1.6% as West Asian, 1.4% as Latin American, .40% as Aboriginal, .20% as Japanese, and 3.2% as Other. Additional secondary characteristics can be found in Appendix A.

### 2.2 Construction of the Alternative Masculinity Measure

The thematic scales for the ALT-M were theoretically derived from two areas of the masculinity literature: measurement of traditional masculinity and masculine norms, and qualitative research on modern or alternative masculinities. I used a multistage approach to develop the item pool and built the measure using the construct-oriented approach (see Jackson 1971; Paunonen & Jackson 1985) and related recommendations by Clark and Watson (1995). These stages can be summarized as: 1) selecting the constructs; 2) clearly defining those constructs and outlining their content domain; 3) developing the item pool; and 4) evaluating the content validity of the scales and items. Each stage is described below.

**2.2.1 Selection of the constructs to assess.** Beginning with the measurement literature, I outlined the typical dimensions of masculinity underlying the most commonly

used measures (Table 1 from Chapter 1). As mentioned, most masculinity measures share a fairly unified set of traditional masculine norms, and it was from these that I made the first outline for the constructs that my measure would capture. In combination with this, I analyzed the qualitative literature on alternative forms of masculinity for examples of common themes, lining them up as well as possible with the constructs from the traditional masculinity measures. For example, while homophobia or heteronormativity were very common themes within the masculinity measures, a more inclusive view of homosexuality and a rejection of homophobia were common themes within the qualitative literature. From this emerged a construct for my own measure, homophilia. A more detailed version of these constructs was provided in Chapter 1 in section 1.4.

**2.2.2 Defining the constructs and delineating their content domain.** When developing the scales, I adhered to the rational approach (Jackson, 1971), whereby each scale was provided with a clear definition, against which all items created for that scale had to align. Each of my scales is bipolar, meaning that both ends describe opposites that exist along a continuum of a specific theme. For example, a scale assessing attitudes about femininity has high scores representing positive attitudes towards femininity and feminine behaviours and low scores representing negative attitudes. The definitions for low and high scores of all original scales developed for the ALT-M can be found in Appendix B.

Originally, eleven scales were developed which were thought to encompass all of the facets which might be considered important components of a progressive masculinity. Eventually this list was condensed into 9 scales titled Homophilia, Pro-Femininity,

Freedom of Emotional Expression, Indifference Towards Status, Interdependence, Self-Restraint, Diplomacy, Gender Egalitarian, and Attitudes Towards Sex and Intimacy.

**2.2.3 Developing the item pool.** The items were developed in an iterative process by myself and my supervisor over several months of discussions and revisions. The items were derived from readings of the academic research on alternative masculinities discussed in the introduction. Items were also built based on content from various media outlets, such as books, news and magazine articles, TED talks, dedicated forums and websites, movies, documentaries, etc. dealing with ideas of modern or alternative masculinity which were mentioned in Chapter 1.

**2.2.4 Establishing and evaluating content validity.** Once a final set of 14 items for each of the 9 scales was developed, they were sent out to expert reviewers for content validity analysis. A copy of the form sent to the reviewers can be found in Appendix C. The measure was sent to a group of fifteen experts in various fields, consisting of graduate students, professors, and research scientists. Research areas of these experts include, but aren't limited to, psychometric development, aggression, personality, scale development, sexuality, and measurement.

The experts were asked to rate each item for its relevance on the given scale from 1 to 5 and to provide any additional comments regarding the scales and their items. On the whole, the ratings for the comments were high (often averaging 4 or above) and each item which received an average score below 4 was reviewed more closely for wording and relevance. Critiques for specific scales and items were addressed individually and adhered to in most cases. Many of the issues the reviewers noted had to do with wording or relevance of specific items while a few noted some issues regarding ambiguity of the

Homophilia and Indifference towards Status scale. As a result, the focus of these scales was altered slightly to address the criticisms. All issues were considered carefully and feedback that was potentially at odds with the theoretical basis of the measure was discussed with my supervisor to decide whether or not to accept the suggested alterations.

**2.2.5 Initial item pool.** After the content validity analysis, the final measure was ready for dissemination and data collection. The final measures had a total of 101 items with the following breakdown: Homophilia (11 items), Pro-Femininity (12 items), Attitudes towards Sex and Intimacy (11 items), Freedom of Emotional Expression (12 items), Gender Egalitarian (10 items), Indifference towards Status (10 items), Interdependence (12 items), Diplomacy (12 items), and Self-Restraint (11 items). A full list of all the items can be found in Appendix D.

### **2.3 Additional Materials**

In addition to the ALT-M, participants were administered other questionnaires for the purposes of validity analyses and for some exploratory work in terms of relating personality and trait emotional intelligence to masculinity. The description of the scales is listed here along with Cronbach's alpha values of internal consistency derived from my study sample.

*Conformity to Masculine Norms Inventory-46 (CMNI-46).* The CMNI-46 is a short version of the original CMNI developed by Parent & Moradi (2009). This measure assesses the degree to which males conform to traditional masculine norms. It consists of 46 items which reflect the following subscales: Winning, Emotional Control, Risk-Taking, Violence, Power over Women, Playboy, Self-Reliance, Primacy of Work, and Heterosexual Self-Presentation. Responses are measured on a 4-point Likert scale (1 =

Strongly Disagree, 4 = Strongly Agree). The Cronbach's alpha for the total scale based on my study's sample is strong at .858.

*Aggression Questionnaire.* The Aggression Questionnaire (Buss & Perry, 1992) captures an individual's level of aggression in four separate domains: Physical Aggression, Verbal Aggression, Anger, and Hostility. It consists of 29 items which are distributed across the four scales representing those domains. The Cronbach's alpha for the total scale based on this sample is strong at .878.

*HEXACO Personality Inventory-short version.* The short version of the HEXACO personality inventory was developed by Ashton & Lee (2009). The HEXACO is an adaption of the commonly used Big-5 personality inventory in that it adds an additional domain to the existing 5: honesty-humility. It contains 60 items across six scales: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. Responses are measured on a 5-point Likert scale (1 = Strongly Disagree and 5 = Strongly Agree). The Cronbach's alphas for each scale are low to moderate: Honesty-Humility = .640, Emotionality = .618, Extraversion = .737, Agreeableness = .695, Conscientiousness = .747, and Openness to Experience = .688.

*Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF).* Petrides (2009) developed this short form of the TEIQue by taking 2 items from each of the 15 dimensions on the original measure, totaling 30 items. This measure captures the degree of an individual's trait level emotional intelligence. Responses are measured on a 7-point Likert scale (1 = Completely Disagree and 7 = Completely Agree). The Cronbach's alpha for this sample's total scale is somewhat low but still adequate at .695.

## **2.4 Procedures**

The study was approved by the University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (approval in Appendix E). Participants were recruited from the university's online Psychology research participant pool. If interested in the study, they could click the provided link and be taken to the study site where they were presented with the letter of information and were required to provide their consent to participate (if they declined, they would be taken to the end of the survey).

Participants could take one of two surveys online, both of which included the same set of demographic questions, the original version of the ALT-M, and the CMNI-46. The difference between the two groups was in the additional questionnaires they answered. Group 1 completed the Aggression Questionnaire and the TEIQue-SF while Group 2 completed the HEXACO Personality Inventory – Short Version. The purpose of these additional measures was for discriminant validity analyses and to gain some simple information on the relationships between masculinity and aggression, trait emotional intelligence, and personality.

Participants conducted their surveys on Qualtrics and it took approximately 40 minutes to complete. After they completed all of the questionnaires they were debriefed and were compensated with partial credit for one of their undergraduate psychology courses.

## **2.5 Analyses**

As mentioned, the psychometric properties of previous masculinity measures have not been robustly analyzed (e.g. the MRAS). Those that have been put to more rigorous



scale development techniques, such as the CMNI and the MRNI-r, have used principal-axis factor analysis, a common form of Exploratory Factor Analysis (EFA), to determine the factor structure of their measurements. For the ALT-M, I also used an EFA, but only to assess the unidimensionality of my individual scales. In contrast to these other measures, the bulk of my analysis employed a combination of Exploratory Structural Equation Modeling (ESEM) and Confirmatory Factor Analysis (CFA) for purposes of item reduction and scale refinement as well as to assess the factor structure and fit of my measurement model.

Before discussing ESEM, a fairly new approach in measurement model building, it is important to specify that the use of CFA here was both exploratory and confirmatory. That is, my analysis can be considered confirmatory due to the construct-orientated approach I took during my measure's development, where I clearly defined the constructs to be measured. However, my analysis can also be considered exploratory as I was still exploring the psychometric structure of my model and future samples will be required to confirm this structure. It is useful at this point to clarify that CFA refers to the type of analysis being conducted, not the stage of measurement development. Although it is more common to use EFA rather than CFA when the stage of development could still be considered exploratory, I chose CFA for several reasons. First, I had strong a priori theoretical rationale for the scales and how they should be separated, therefore an EFA to determine the overall factor structure was deemed unnecessary. Further, I wanted to take advantage of the fit indices provided in a CFA to help assess the strength of the model. Finally, putting a measure into a CFA provides a simplified structure compared with an EFA, making it more practical for implementation and interpretation.

The primary difference between EFA and CFA is the restrictions set on the latter. A CFA represents a simpler and more parsimonious version of the measurement model than an EFA. In CFA, all indicators are forced to load on a single factor and all cross-loadings on alternative factors are set to zero. This simplifies the measurement structure, making it easier to define and interpret, but, forcing all cross-loadings to zero is often too restrictive and although it results in a more parsimonious model, the fit may not be suitable. An ESEM combines measurement model parts from EFA, such as a target rotation, and CFA, such as fit indices, to derive a model that is both parsimonious and suitable for the data (Asparouhov & Muthen, 2009).

The analyses used in this project are best described in four stages: (1) preliminary item and scale analyses, (2) item selection, scale refinement, and finalization of the measure, (3) investigation of convergent validity and construct distinctiveness, and (4) identification of distinct masculinity profiles. These analyses will be split into two chapters: 1 and 2 will be addressed in Chapter Three, and 3 and 4 will be presented in Chapter Four. The following provides a brief outline of the analyses conducted at each stage, but more detailed descriptions will be presented in the relevant results sections.

**2.5.1 Preliminary item analyses.** Exploratory Factor Analyses (EFAs) were performed on each scale individually to confirm their unidimensionality. This bypassed the need to perform an EFA on the full measure by satisfying the assumption of unidimensionality within each factor. A few obviously problematic items and one scale was removed at this stage.

**2.5.2 Item selection, scale refinement, and measure finalization.** After the scales were deemed appropriate for factor analysis, a series of Exploratory Structural

Equation Models (ESEMs) with all remaining items were used to assess the goodness of model fit and to remove problematic items. Numerous ESEMs were conducted in an iterative fashion to remove the most poorly defined items. Those that had initial factor loadings below .30 and cross loadings above .30 were removed one at a time, beginning with the most problematic item and finishing with the least. Once all scales were adequately refined, a total of seven scales with six items each remained. A Confirmatory Factor Analysis (CFA) was conducted on the data so that its fit, factor loadings, and latent variable correlations could be assessed. A higher order factor analysis was also conducted. At this point, the revised scales were renamed and redefined to better suit their reduced composition of items.

**2.5.3 Validity analyses.** Once a satisfactory measurement model was finalized, it was validated. Many of the scales in the ALT-M can be thought of in part as inverses of scales from the CMNI; the CMNI was often used in developing the definition for a low score on several of the ALT-M scales. Thus, the CMNI was the primary source for determining convergent validity and to a somewhat lesser extent, discriminant validity. Due to the similarity between the two measures, the CMNI and ALT-M were also compared to assess construct distinctiveness to ensure the ALT-M was not simply capturing the equivalence of low scores on the CMNI. This was done by correlating the ALT-M and the CMNI with the TEIQue-SF, Aggression Questionnaire, and HEXACO-PI-sf. The influence of the CMNI was removed from the correlations with the ALT-M to determine the degree to which the ALT-M had unique relationships with these variables.

**2.5.4 Latent profile analysis.** Once an acceptable measurement model was established and validated, the measure was put through an LPA in order to identify

meaningful groups of participants who had similar responses on the ALT-M. The optimum number of profiles was determined by comparing the fit of models with differing numbers of profiles, beginning with one and moving up until the best model fit was obtained (Nylund, Asparouhov, & Muthen, 2007). The average scale scores of each profile were then analyzed and compared with one another to generate potential descriptions for each group. The profiles were then compared along specific demographic factors and scores on the Aggression Questionnaire.

## **CHAPTER 3: MEASUREMENT MODEL**

### **3.1 Data Inspection**

A total of 616 participants completed the ALT-M and CMNI surveys. A subset of 333 of these participants completed the TEIQue-SF and the Aggression Questionnaire, and another subset of 283 completed the HEXACO-PI-r. Reliable answering was assessed with two attention-check items. If participants failed to answer correctly on at least one of the two questions, their data was removed. Participants who responded to less than half of the ALT-M were also removed. Finally, participants who did not identify as male or who did not consent were removed. A total of 119 participants were removed for the following reasons: 13 for not consenting; 24 for completing between 0 to 50% of the ALT-M; 29 for not identifying as male; and 53 for careless answering. This left a total of 497 participants for the final analysis. Of this total, 253 completed the TEIQue-SF and Aggression Questionnaire, and 243 completed the HEXACO-PI-r.

### **3.2 Unidimensionality of Individual Scales**

To assess the unidimensionality of each scale, individual EFAs were run using Maximum Likelihood estimation. Unidimensionality is confirmed when one dominant dimension is sufficient to explain the latent variable, while recognizing that smaller facets may be present in addition to the larger factor (Reeve & Fayers, 2005). Inspection of the eigenvalues, scree plot, factor loadings, and correlations among factors (when more than one factor was extracted and an oblique rotation was obtained) were inspected to evaluate dimensionality. For example, if the eigenvalue and scree plot showed a substantial preference for a 1-factor versus a 2- or 3-factor solution, this would suggest that a 1-factor solution may be appropriate. Further, if in a 2-factor solution the factors were

highly correlated, this would provide evidence that the items could be combined into one factor. In addition, if all items loaded on the original factor at a reasonable level (above .30) then a 1-factor solution would be acceptable.

However, if unidimensionality was not satisfied in the initial scales, steps were taken to try and improve the scale so that a 1-factor solution could be deemed acceptable, or so that the scale could be acceptably split into two separate unidimensional scales. The unrotated factor loadings were assessed for any problematic items, as well as for related subsets of items that differed from the larger hypothesized dimension, causing the scale to split. Problematic items were removed in an iterative fashion until a 1-factor solution was deemed acceptable, or in situations where this was impossible, the scale was considered for division into two, or removed from the measure completely. These preliminary analyses are presented below.

**3.2.1 Homophilia EFA.** The pattern of eigenvalues (first factor = 4.48, second factor = 1.17) and scree plot favoured the 1-factor solution. All items loaded on the intended factor above .30. In a rotated two-factor solution (oblimin rotation), the two factors were also highly correlated ( $r = .58$ ), suggesting substantial overlap. Thus, a 1-factor solution was accepted.

**3.2.2 Attitudes towards sex and intimacy EFA.** Three factors had eigenvalues greater than one (4.45, 1.18 and 1.02 respectively), but the scree plot favoured the 1-factor solution, and all items loaded above .30 on the first un-rotated factor. In an obliquely rotated 3-factor solution, the factors were all moderately to highly correlated, ranging from  $r = .415$  to  $.656$ . Thus, no changes were made to the scale at this point.

**3.2.3 Diplomacy EFA.** Three factors had eigenvalues greater than one (4.12, 1.21, and 1.01 respectively), but the scree plot favoured the 1-factor solution, and all items loaded above .30 on the first un-rotated factor. In an obliquely rotated 3-factor solution, the factors were all highly correlated, ranging from  $r = .559$  to  $.586$ . Thus, a 1-factor solution was accepted and no changes were made to the scale at this point.

**3.2.4 Freedom of emotional expression EFA.** Three factors had eigenvalues greater than one (3.58, 1.28, and 1.01 respectively), but the scree plot favoured the 1-factor solution. In an obliquely rotated 3-factor solution, the three factors were also all moderately correlated, ranging from  $r = .417$  to  $.601$ . Examination of the un-rotated factor solution revealed a few items loading below .30 on the first un-rotated factor. These items were removed in an iterative fashion, with the lowest loading first, followed by the second, and finally a third. Removal of the three items made a 1-factor solution acceptable and no further changes were made at this point.

**3.2.5 Gender egalitarian EFA.** The EFA revealed only a 1-factor solution with only 1 eigenvalue greater than 1 (3.660) and with all items loading above .40. No changes were made to the scale at this point.

**3.2.6 Indifference towards status EFA.** Three factors had eigenvalues greater than one (1.91, 1.38, and 1.15), and the scree plot did not show evidence that a 1-factor solution was viable. Most items failed to load above .30 on the first un-rotated factor. In an obliquely rotated 3-factor solution, the correlations between the factors were low to moderate, ranging from  $r = .198$  to  $.395$ . An item with the lowest loading was removed, and the EFA was re-run but the scale improved only marginally. An indistinguishable 3-factor solution remained. Items were removed in an iterative fashion to see if the

hypothesized construct would emerge, but in the end no acceptable solution appeared and the entire scale was removed.

**3.2.7 Interdependence EFA.** Three factors had eigenvalues greater than one (2.88, 1.47, and 1.04), and the scree plot indicated that a 1-factor solution may be possible. However, in an obliquely rotated 3-factor solution, Factors 1 and 2 showed a low correlation ( $r = .27$ ) but the remaining correlations were high ( $r = .57$  and  $r = .61$ ). The loadings on the first un-rotated factor were promising, with the majority loading above .4. Items that did load below .3 on this first factor were removed in a cumulative fashion until a 1-factor solution could be justified. After removing three items, the 1 factor solution became acceptable and no further changes were made.

**3.2.8 Pro-Femininity EFA.** Two factors had eigenvalues greater than one (4.22 and 1.02 respectively), and the scree plot favoured the 1-factor solution. All items loaded on the first un-rotated factor above .30. In an obliquely rotated 2-factor solution, the factors were highly correlated ( $r = .71$ ) suggesting strong overlap between the two. Thus, a 1-factor solution was deemed acceptable and no changes were made to the scale at this point.

**3.2.9 Self-restraint EFA.** Four factors had eigenvalues greater than one (3.24, 1.29, 1.10, and 1.02 respectively), and scree plot seemed to favour a one factor solution. The loadings on the first un-rotated factor were mostly above .30. In an obliquely rotated 4-factor solution, the factor correlations were very low and included a negative correlation (range is  $r = -.05$  to  $.592$ ). Four problematic items were identified for having low loadings or high cross-loadings and were removed in an iterative fashion. A 1 factor solution was deemed appropriate at this point and no further changes were made.



**3.2.10 Summary.** Individual EFAs were conducted to determine the acceptability of a 1-factor solution for each scale. With some modifications, it was possible to establish unidimensionality in 8 of the 9 proposed scales. The scale, Indifference Towards Status, was removed from the measure entirely. Most of the other scales had items removed to help ensure the appropriateness of individual unidimensional scales, which was expected. My intention was to begin with 12 items per scale and delete approximately 4 items per scale at various stages of the item analyses. In this first stage addressing unidimensionality, a total of 20 items (including the 10 items from Indifference Towards Status) were removed from the item pool. A list of all the items removed during this analysis can be found in Appendix F. The next stage addresses further refinements for the scales and items, but in a cumulative approach that involves the whole measure, rather than each scale individually.

### **3.3 Item Analysis and Scale Refinement using ESEM**

The remaining 8 scales which displayed evidence of unidimensionality were then analysed together using Exploratory Structural Equation Modeling (ESEM) with a target rotation in Mplus 7.4 (Muthen & Muthen, 1998-2015). The purpose of this stage was to refine the scales further by removing items that contributed the least to internal consistency reliability, and also to promote discriminant validity between the scales. More specifically, as Jackson pointed out in the development of the Personality Research Form (Jackson, 1974), it is possible to promote discriminant validity of individual scales early in test development by removing items that correlate more highly with other scales than with the intended scale. Normally this is done with EFA, but ESEM along with a targeted rotation is ideal for this purpose. As discussed by Asparouhov and Muthen

(2009), an ESEM with a target rotation is like a regular EFA, but the target rotation allows you to specify which variables should load highly on the hypothesized factors. Specifying the hypothesized loading is akin to CFA, but unlike the CFA models in which cross-loadings are typically constrained to 0, ESEM (like EFA) allows all the cross-loadings. These cross loadings are very useful for noting problematic items: any item that displays a higher loading on an alternative scale than on its own targeted scale shows poor discriminant validity and should be considered for removal.

An ESEM using a weighted least squares estimator with mean and variance adjustment (WLSMV) was thus conducted on the data. This estimator is appropriate and ideal when variables are categorical-ordinal. Typically, analysis of Likert-style items assumes that responses exist on an interval-ratio scale and the ESEM assumes normality of responses on each item. However, these assumptions are rarely met in reality and treating the variables as categorical rather than continuous is actually a more conservative and accurate approach. Thus, the variables were specified to be categorical, rather than continuous, which is comparable to Samejima's IRT graded response models (Baker & Kim, 2004; Samejima, 1969).

I set two rules for item removal at this stage: remove any item that has a higher loading on an alternative scale than its own, and remove any item that loads below .30 on its intended factor. Assessing the cross-loadings was done in an iterative and cumulative fashion with one item removed at a time and then repeating the ESEM. All items from all scales were compared in each iteration to determine which item was most problematic in the whole measure before one was selected for removal. Removing one item at a time was done to account for the wide-spread effect removing one can have on the parameter

estimates in a model. The items removed from the model and the order in which they were removed can be found in Appendix G.

In total, 25 items were removed during this stage of ESEMs. This included five items from Diplomacy, two from Gender Egalitarian, three from Interdependence, one from Attitudes towards Sex and Intimacy, one from Self-Restraint, one from Freedom of Emotional Expression, and an additional full scale (Pro-Femininity) consisting of 12 items. The Pro-Femininity scale was removed when it became clear after the first dozen iterations that it had very high cross loadings with many of the other scales, causing many of the items to load far below .30 on their intended scale. While cross-loadings of a modest magnitude are to be expected given the conceptual overlap between the constructs, multiple high cross loadings can be indicative of problematic items, and sometimes, a problematic scale.

Prior to the removal of the 25 items, an initial model of the ESEM was run and its fit assessed (Table 2). The fit indices used here are the same as those recommended for CFA by Kline (2016): Chi Square, RMSEA, CFI, and WRMR. The following are generally accepted guidelines for good fit of each index: Chi Square is non-significant (though this is very unlikely given the large sample size); RMSEA is below .08 for acceptable fit and below .05 for good fit; CFI is above .90; and WRMR is below 1.00 (Muthen & Muthen, 1998-2015). This last index is fairly new and though it is recommended here to be below 1.00, it should still be considered experimental and interpreted with caution.

The fit is very good in the original ESEM model, with a strong RMSEA and CFI, and an acceptable WRMR (Table 2). Also presented in Table 2 is a modified ESEM

model, which shows the fit after the removal of 25 items. Although the fit is slightly better in the original model, both models have excellent fit, and there is no specific reason why one model should be better than the other. The removal of poor items does not always lead to better fit, regardless of the goal of improving internal discriminant validity.

Table 2.  
*Model fit of ESEM*

Model	$\chi^2$ (df)	RMSEA (CI)	CFI	WRMR
1. Original ESEM	3539.429 (2620) p < .001	.027 (.024 - .029)	.953	.808
2. Modified ESEM	1896.856 (1169) p < .001	.035 (.032 - .038)	.945	.810
3. Final ESEM	1095.147 (623) p < .001	.039 (.035 - .043)	.954	.739

Note: Modified ESEM = model after 25 items were removed.

At this point the measure had good fit and all the highly problematic items had been removed, satisfying the issue of discriminant validity across the scales. It would have therefore been acceptable to move on to the next stage and finalize the measure with a CFA. However, given the uneven distribution of removed items across the scales, I chose to continue with the ESEM process in order to end up with a more evenly dispersed measure in terms of items per scale. The final ESEM model (Table 2) was achieved by using further ESEMs to reduce each scale to six items. The choice of six items was made because the smallest scales at this point (Interdependence and Self-Restraint) had six items each, so the others were similarly shortened to produce an equitable measure. This means that items that loaded well on their own scales and did not have particularly high

cross loadings on others were removed, but those that remained were comparatively very strong.

Thus, specific numbers of items were removed from the following scales:

Homophilia (remove 5); Freedom of Emotional Expression (remove 1); Diplomacy (remove 1); Gender Egalitarian (remove 2); and Attitudes towards Sex and Intimacy (remove 4). As the item removal at this stage was targeted, rather than assessing all scales at once for the poorest fitting item, only one scale at a time was assessed for item removal. Yet, items were once again removed in an iterative fashion. Once again, the fit for the final model (Table 2) was excellent and the changes were thus deemed appropriate.

The final ESEM model's factor loading matrix and the correlations between the factors can be found in Tables 3 and 4. As can be seen, no substantial cross loadings remain in the final ESEM and all items load strongly on their hypothesized factors. Yet, though the cross loadings aren't substantial, they do have a cumulative influence on the fit of the model which will become more apparent when we move from an ESEM to a CFA as all of these cross loadings will be constrained to 0. This constraint should not only decrease the model fit, it will also likely inflate the correlations between the scales which are currently low to moderate (Table 4).

Table 3.

*Factor loadings (including cross-loadings) of final ESEM*

	Hom	FEE	Inter	SR	Dip	GE	ASI
Hom1	<b>0.743</b>	-0.003	0.089	-0.042	0.011	0.084	-0.007
Hom3	<b>0.779</b>	0.025	0.173	0.043	-0.002	-0.025	-0.080
Hom4	<b>0.637</b>	0.002	0.056	-0.006	-0.030	0.081	-0.041
Hom5	<b>0.680</b>	-0.054	0.010	-0.017	0.070	0.021	0.032
Hom10	<b>0.625</b>	0.088	-0.030	0.057	0.045	0.016	-0.053
Hom11	<b>0.702</b>	0.029	-0.204	-0.096	0.103	0.137	0.014
FEE2	-0.127	<b>0.635</b>	0.050	0.024	0.001	-0.045	0.010

FEE3	-0.066	<b>0.490</b>	0.244	0.055	-0.136	0.232	-0.026
FEE4	0.002	<b>0.526</b>	-0.035	-0.108	0.143	0.038	0.108
FEE6	0.216	<b>0.575</b>	0.099	0.029	0.007	-0.131	0.009
FEE8	0.140	<b>0.613</b>	-0.115	0.029	0.029	0.042	0.070
FEE10	-0.036	<b>0.779</b>	-0.043	0.062	-0.042	0.054	-0.057
Inter1	-0.015	0.132	<b>0.592</b>	-0.021	0.015	0.020	0.046
Inter2	0.054	-0.066	<b>0.735</b>	0.136	-0.028	0.078	0.082
Inter3	0.112	-0.010	<b>0.445</b>	0.017	-0.203	0.099	0.090
Inter4	0.059	0.112	<b>0.430</b>	-0.135	0.216	-0.059	0.117
Inter5	-0.038	0.102	<b>0.530</b>	-0.086	0.136	0.065	0.023
Inter6	0.008	0.147	<b>0.460</b>	-0.025	0.141	-0.010	0.046
SR1	-0.109	0.038	0.312	<b>0.401</b>	0.200	0.005	-0.139
SR2	-0.128	0.022	0.042	<b>0.649</b>	0.083	0.074	-0.068
SR3	0.004	0.009	-0.092	<b>0.707</b>	-0.150	0.081	0.135
SR8	-0.045	0.098	-0.078	<b>0.388</b>	0.290	0.001	0.030
SR10	0.053	-0.009	0.084	<b>0.667</b>	0.073	0.038	-0.112
SR11	0.068	-0.002	-0.224	<b>0.665</b>	-0.029	-0.030	0.308
Dip2	0.103	-0.007	0.067	0.170	<b>0.715</b>	-0.164	-0.002
Dip3	0.077	-0.01	0.023	0.183	<b>0.724</b>	-0.125	0.078
Dip6	-0.067	0.025	0.076	0.030	<b>0.490</b>	0.161	0.064
Dip9	0.101	-0.100	0.008	0.133	<b>0.599</b>	-0.022	-0.043
Dip11	0.047	0.066	-0.051	-0.079	<b>0.544</b>	0.258	-0.023
Dip12	-0.070	0.102	0.036	-0.111	<b>0.647</b>	0.153	0.108
GE1	0.047	0.053	0.025	0.039	-0.040	<b>0.504</b>	0.125
GE2	0.162	-0.070	0.335	0.012	-0.011	<b>0.412</b>	0.032
GE4	0.207	0.010	0.060	-0.095	0.059	<b>0.426</b>	0.130
GE5	0.158	-0.027	-0.057	0.152	-0.009	<b>0.469</b>	0.126
GE6	0.045	0.129	-0.093	0.105	0.089	<b>0.728</b>	-0.070
GE7	0.059	0.132	0.028	0.008	0.069	<b>0.594</b>	-0.112
ASI1	-0.106	-0.053	0.012	0.061	-0.002	0.099	<b>0.762</b>
ASI4	0.128	0.202	0.175	0.022	-0.081	-0.027	<b>0.520</b>
ASI5	0.112	0.155	0.081	0.051	-0.096	-0.256	<b>0.707</b>
ASI8	-0.103	-0.130	-0.040	0.063	0.091	0.063	<b>0.733</b>
ASI10	-0.106	-0.059	0.025	-0.009	0.136	0.092	<b>0.751</b>
ASI11	-0.032	0.057	0.064	0.063	0.075	0.103	<b>0.534</b>

Note: Bolded numbers represent primary loadings, remaining numbers are cross loadings.

Hom = Homophilia, FEE = Freedom of Emotional Expression, Inter = Interdependence, SR = Self-Restraint, Dip = Diplomacy, GE = Gender Egalitarian, and ASI = Attitudes towards Sex and Intimacy. Numbers following scale names in first column represent original item numbers.

Table 4.  
*Correlations of scales in final ESEM.*

	Homo	Fee	Inter	SR	Dip	GE	ASI
Homo	1						
Fee	0.411	1					
Inter	0.211	0.402	1				
SR	0.001	0.052	0.053	1			
Dip	0.148	0.281	0.211	0.369	1		
GE	0.429	0.373	0.185	0.123	0.257	1	
ASI	0.005	0.217	0.131	0.464	0.206	0.186	1

Hom = Homophilia, FEE = Freedom of Emotional Expression, Inter = Interdependence, SR = Self-Restraint, Dip = Diplomacy, GE = Gender Egalitarian, and ASI = Attitudes towards Sex and Intimacy.

### 3.4. Final Scale Properties and CFA Analyses

Once a satisfactory measurement model was achieved through ESEM, the final measure was put through a CFA in order to assess the model fit with the typical constraints assumed in everyday measurement use (i.e. no cross loadings between the scales). It is important to point out that the purpose at this stage was not to use CFA to confirm the structure in the traditional sense, which is typically done as part of a reliability check with a new sample of participants. As mentioned in the introduction, confirming the structure of the measurement model will need to be implemented in future with use of new samples. Rather, the purpose of using CFA in this section was to evaluate the fit of a more restrictive model. It is clear that such a model will not fit as well as the ESEM, because modest cross loadings still remain even after the most problematic items were removed. Again, given the conceptual overlap between the scales, this is to be expected and does not necessarily indicate that the measure is poorly defined.

The same fit indices used for the ESEM were used for the CFAs. Table 5 lists the fit indices for three separate CFAs: the original CFA before any adjustments were made; a CFA conducted after items were removed from the EFA process; and a final CFA of the

final measurement model after item selection was completed. Overall, the CFAs show acceptable fit (i.e., the RMSEA show excellent fit, whereas the CFI of .897 show acceptable fit, and the WRMR ideally would be below 1.00, but once again, the developers of this index suggest that it is still at the experimental stage so should be interpreted with caution).

Table 5.  
*Model fit of CFAs*

Model	$\chi^2$ (df)	RMSEA (CI)	CFI	WRMR
1. Original CFA	8363.980 (4913) $P < .001$	.038 (.036 - .039)	.835	1.653
2. Modified CFA (after EFAs)	6189.386 (3131) $p < .001$	.044 (.043 - .046)	.844	1.682
3. Final CFA (after ESEMs)	1834.197 (798) $p < .001$	.051 (.048 - .054)	.897	1.455

As expected, the CFA indices are not as high as the ESEMs, but given the restraint placed on the CFA model discussed above, the fit of the model can still be deemed acceptable. The final list of scales and items with standardized factor loadings can be found in Table 6. After item removal, it was necessary to change the names of some of the scales. As such, all tables from this point forward will include the names of the new scales, which will be discussed in detail in section 3.5. In the end, I retained 7 scales with 6 items each for a total of 42 items. All items load strongly on their scales (range .414 - .823) with the vast majority loading above .60.



Table 6.  
*Standardized factor loadings for final CFA*

Scale/Item	Loading
<b>Homophilia</b>	
I would be supportive if a close friend of mine told me he was gay.	0.812
I would be comfortable working with a gay man on a project.	0.823
I would be comfortable in a course taught by a gay male teacher.	0.682
Gay men should not be allowed to teach young school children. (R)	0.673
I am uncomfortable around gay people. (R)	0.680
I would be very disappointed if I had a son who was gay. (R)	0.728
<b>Emotional Openness</b>	
I'm willing to seek emotional support from others.	0.507
I think it's good to talk about things that upset you.	0.661
It's fine for children to see their father cry.	0.607
If a male friend cried in front of me, I would think he was weak. (R)	0.681
I think it's un-masculine when men in positions of power cry in public. (R)	0.701
Men keep their sad emotions to themselves. (R)	0.681
<b>Cooperation</b>	
Cooperating with others is an important skill to have.	0.645
It is important to me to show respect to my peers and colleagues.	0.709
My peers and colleagues can count on me when they need help.	0.414
When working on group projects, collaborating is more useful than dominating.	0.622
I care about getting along well with others.	0.623
I respect other peoples' opinions as much as my own.	0.635
<b>Reticence</b>	
Doing dangerous things that could cause yourself or others harm is stupid.	0.509
I avoid doing crazy things with my friends that I might later regret.	0.629
I prefer to do something quiet at home than go out and do something wild.	0.679
I think it is exciting to do dangerous things, like drive at high speeds. (R)	0.608
Most of my friends would describe me as crazy or wild. (R)	0.626
I like to attend the wildest parties. (R)	0.787
<b>Avoidance of Physical Aggression</b>	
I don't like getting in physical fights.	0.742
If someone tried to fight me, I would try to avoid it.	0.797
Physical aggression among men does not solve problems.	0.628
I have gotten into a few physical fights with other guys. (R)	0.580
Some guys deserve a good beating in order to teach them a lesson. (R)	0.634
Sometimes the only way to solve a problem is with your fists. (R)	0.727
<b>Gender Egalitarian</b>	
I think there is still a lot of gender inequality in our society.	0.572
It's unfair when women are paid less than men for identical work.	0.621
Women are as effective as men as political leaders.	0.626

I would feel uncomfortable if my male friends expressed sexist opinions.	0.582
Women complain too much about inequality. (R)	0.769
There is too much social support for women. (R)	0.673
<b>Intimacy Orientation</b>	
I only have sex with someone if I really care about them.	0.775
Emotional intimacy in relationships is more important to me than sex.	0.644
In general, I am more interested in long term relationships than casual sex.	0.654
I am comfortable with having casual sexual partners. (R)	0.733
I can have sex with someone without getting emotionally attached to them. (R)	0.791
I don't need to know someone's name before I have sex with them. (R)	0.687

Note: Scale titles are those after revision in section 3.5.

All loadings significant at  $p = .001$

Cronbach's alphas and composite reliability for each scale and the full measure can be found in Table 7. Composite reliability is a test of internal consistency similar to Cronbach's alpha, but is based on the actual loadings in the CFA (Kline, 2016) The internal consistency reliabilities of each scale and the entire measure are all good, with a few being strong (Homophilia, Intimacy Orientation, and Avoidance of Physical Aggression) and one being weaker than expected but still acceptable (Cooperation).

Table 7.

*Internal Consistencies for final measurement model*

Scale	Cronbach's Alpha	Composite Reliability
Homophilia	.804	.812
Emotional Openness	.748	.793
Cooperation	.671	.785
Reticence	.768	.793
Avoidance of Physical Aggression	.789	.804
Gender Egalitarian	.753	.794
Intimacy Orientation	.818	.811
Total Measure	.885	.965

The correlations between each factor can be found in Table 8. The correlations are mostly moderate though they range from weak to strong ( $r = .013$  to  $.622$ ). As mentioned, these moderate correlations are expected due to the theoretical relationship proposed to

exist between these dimensions and the cross loadings that remained in the final ESEM (Table 3). They are also inflated compared to the correlations found in the final ESEM model (Table 4), which is again expected when the cross loadings are forced to zero. These moderate correlations provide further evidence of scale discrimination but also suggest the scales are related to distinct parts of a larger construct.

Table 8.  
*Correlations of latent variables*

	FEE	In	SR	D	GE	ASI	H
FEE	1						
In	0.598	1					
SR	0.170	0.194	1				
D	0.383	0.410	0.554	1			
GE	0.573	0.445	0.266	0.450	1		
ASI	0.322	0.336	0.598	0.369	0.309	1	
H	0.512	0.360	0.029	0.271	0.622	0.013	1

All correlations significant at  $p < .001$ , except SR & H and ASI & H which are non-significant; FEE = Freedom of Emotional Expression; In = Interdependence; SR = Self-restraint; D = Diplomacy; GE = Gender Egalitarian; ASI = Attitudes towards Sex and Intimacy; H = Homophilia

To determine whether or not these seven factors could be loaded onto a single, higher order factor that would theoretically represent the construct of progressive masculinity, a hierarchical CFA was conducted. This is a simple CFA procedure whereby the seven factors are loaded onto a single factor that is hypothesized to represent the progressive masculinity the measure was designed to capture. The results found that though the fit was not very strong, all of the factors did load strongly and significantly on the higher order progressive masculinity factor, providing adequate support for the construct. The fit indices were as follows:  $\chi^2(812) = 2693.233$ ,  $p < .001$ , RMSEA = .068 (CI = .065 - .071), CFI = .813, and WRMR = 1.955. The loadings can be found in Table 9.

Table 9.  
*Factor loadings of higher order CFA*

Scale	Standardized Loading
Homophilia	.527
Emotional Openness	.721
Cooperation	.651
Reticence	.510
Avoidance of Physical Aggression	.648
Gender Egalitarian	.771
Intimacy Orientation	.506

### 3.5 Renaming and Redefining the Scales

After refining the scales and deleting items it was important to revisit the final content of the items and to adjust scale names and definitions as necessary. Although my intent was to develop broad constructs, factor analytic driven refinements tend to promote narrower constructs. The original definitions for the scales were bipolar and can be found in Appendix B. The final list of items can be found in Table 6. Like the original scales, the re-named scales are bipolar and the name of the scale represents a high scorer on that scale.

The title of Homophilia remained the same and the definition for its high score was restricted to being comfortable interacting with gay men and comfortable with homosexuality generally. A low score represents someone with homophobic attitudes.

Freedom of Emotional Expression was changed slightly to Emotional Openness, defined as supporting the idea that men can and should share and express their feelings. A low score represents someone who believes men should keep their feelings to themselves.

Interdependence was changed to Cooperation, defined as prioritizing good relationships and being cordial and cooperative in interactions with others. A low score represents someone who prioritizes self-interest and is not inclined towards building harmonious relationships.

Self-Restraint was changed to Reticence, defined as someone who shows self-control within the context of risk and who does not enjoy wild and/or dangerous environments. A low scorer is someone who enjoys taking risks and wild environments.

Diplomacy was changed to Avoidance of Physical Aggression and defined as someone who doesn't enjoy or endorse physical aggression between men. A low scorer is someone who believes in the usefulness of physical aggression and either has or would be eager to get into a fight.

Gender Egalitarian remained the same and was defined as someone who believes in gender equality and exhibits feminist sympathies. A low scorer is someone who does not support or agree with women's issues.

Finally, Attitudes Towards Sex and Intimacy was changed to Intimacy Orientation and defined as someone who prioritizes intimacy and emotionally driven relationships over casual sex and/or encounters. A low scorer is someone who is comfortable with multiple sexual partners of a casual nature.

## **CHAPTER 4: VALIDITY AND LATENT PROFILE ANALYSIS**

### **4.1 Data Inspection**

The data used for the Latent Profile Analysis (LPA) was the exact same as that for the measurement model assessment so no data inspection was required. However, the data used for the validity and construct distinction analyses did require additional inspection. As all participants had already been screened for careless responding and other issues, additional participants were removed at this point simply for failing to complete the specific measures of interest. As a reminder, all but 6 participants completed the CMNI-46 (N=491), 253 completed the Aggression Questionnaire and the TEIQue-SF, and 243 completed the HEXACO PI-sf. One person did not complete the Aggression Questionnaire and one person was removed for not completing the TEIQue-SF, resulting in N = 252 for all relevant analyses including these measures. Finally, 4 did not complete the HEXACO PI-sf, resulting in N = 239 for all analyses involving this measure.

### **4.2 Convergent and Discriminant Validity**

As previously mentioned, the ALT-M is conceptually and thematically similar to the CMNI. Specifically, 7 of the CMNI-46 scales can be clearly linked to the 7 ALT-M scales. The ALT-M scales, however, are keyed in the opposite direction and should therefore correlate negatively with their matched CMNI-46 scale. Specific hypothesized negative correlations between theoretically related scales across the two instruments are as follows (scale from CMNI-46 followed by scale from ALT-M): Self-Reliance and Cooperation; Emotional Control and Emotional Openness; Risk-Taking and Reticence; Violence and Avoidance of Physical Aggression; Power over Women and Gender

Egalitarian; Playboy and Intimacy Orientation; Heterosexual Self-Presentation and Homophilia. Results from the analysis can be found in Table 10, with the hypothesized correlations underlined. These hypothesized correlations can be thought of as evidence of convergent validity as defined by Campbell and Fiske (1959) in their seminal article. In fact, the other correlations in the table can, in a sense, inform us about discriminant validity. More specifically, although modest or even substantial correlations are expected among all the CMNI-46 and ALT-M scales because of some conceptual overlap, all correlations in a given column except the convergent hypothesized correlation should be lower in magnitude to show evidence of discriminant validity.

Table 10.

*Correlation matrix showing convergent and discriminant validity of the ALT-M*

	ALTM	Homo	EmOp	Coop	Ret	AvAgg	GenEg	IntOr
CMNI	<u>-.74</u>	-.37	-.58	-.34	-.43	-.54	-.48	-.42
Win	-.36	-.16	-.28	-.15	-.24	-.31	-.22	-.19
EmCon	-.35	-.14	<u>-.57</u>	-.24	-.07	-.18	-.17	-.21
Risk	-.45	-.09	-.14	-.11	<u>-.64</u>	-.40	-.21	-.23
Vio	-.50	-.12	-.18	-.22	-.37	<u>-.66</u>	-.28	-.23
PWom	-.55	-.42	-.42	-.27	-.23	-.31	<u>-.57</u>	-.24
PlayB	-.56	-.03	-.23	-.23	-.45	-.31	-.23	<u>-.80</u>
Self	-.23	-.08	-.36	<u>-.27</u>	-.08	-.15	-.09	-.07
PmWrk	-.01	-.02	-.15	-.02	.04	.07	-.04	.02
Hetero	-.41	<u>-.59</u>	-.31	-.08	-.06	-.22	-.44	-.08

Note: ALT-M = total score for ALT-M; CMNI = total score for CMNI-46; Homo = Homophilia; EmOp = Emotional Openness; Coop = Cooperation; Ret = Reticence; AvAgg = Avoidance of Physical Aggression; GenEg = Gender Egalitarian; IntOr = Intimacy Orientation; Win = Winning; EmCon = Emotional Control; Risk = Risk taking; Vio = Violence; PWom = Power Over Women; PlayB = Playboy; Self = Self-Reliance; PmWrk = Primacy of Work; Hetero = Heterosexual Self-Presentation.

Correlations based on full sample (N = 491). Correlations above +/- .09 are significant at .05; correlations above +/- .12 are significant at .01; and correlations above +/- .16 are significant at .001

All of the scales and the total measure show strong evidence of convergent validity, with correlations ranging from -.57 to -.80. The only exception is the correlation between Cooperation for ALT-M and Self-Reliance from the CMNI-46, which is only -.27. In addition, for each scale on the ALT-M (except Cooperation), the hypothesized

correlations are always higher than the correlations with other scales, providing confirmation of both convergent and discriminant validity.

### **4.3 Construct Distinction**

The primary purpose of this section was to assess the construct distinctiveness between the ALT-M and the CMNI-46. One source of evidence for construct distinctiveness would be to see if the ALT-M scales still correlate with key criterion variables once we control for the overlapping CMNI scales. General personality traits, trait aggression, and trait emotional intelligence were selected as these key criterion variables. With the exception of aggression, the relationship of these variables to masculinity has not been studied specifically in the literature, and so the nature of this work serves the secondary purpose of investigating those relationships.

First, I investigated zero-order correlations between the ALT-M and the criterion variables (HEXACO, TEIQue, and AQ) and between the CMNI and those same criterion variables. Second, to determine if the ALT-M does in fact capture unique covariance with the criterion variables, partial correlations were obtained between the ALT-M scales and the criterion variables while controlling for the theoretically overlapping CMNI scales. For example, to inspect the partial correlation between the ALT-M's Homophilia with the criterion variables, I partialled out the theoretically overlapping CMNI Hereonormativity scale. A significant partial correlation would indicate that a relationship between the ALT-M and one of the criterion variables exists in the population. This would provide evidence that the ALT-M is assessing something distinct from the CMNI in relation to the criterion variable and is therefore representative of a unique construct. These partial correlations can be found in Tables 11 (HEXACO), 12 (TEIQue), and 13 (AQ)



Table 11.  
*HEXACO correlations and partial correlations with ALT-M and CMNI*

	HH	EM	EX	AG	CN	OE
Zero-order r						
ALTM	.24***	.37***	-.10	.29***	.26***	.26***
Homo <sup>A</sup>	-.08	.10	.08	.16**	.08	.17**
EmOp <sup>B</sup>	.06	.34***	.13*	.18**	.12*	.24***
Coop <sup>C</sup>	.15*	.20**	.24***	.39***	.19**	.04
Ret <sup>D</sup>	.21***	.23***	-.42***	.03	.23***	.06
AvAgg <sup>E</sup>	.21***	.25***	-.09	.36***	.23***	.12*
GenEg <sup>F</sup>	.10	.21***	.02	.22***	.16**	.25***
IntOr <sup>G</sup>	.31***	.20**	-.20**	.00	.11	.20**
Partial r						
ALTM	.04	.25***	-.06	.17**	.26***	.11
Homo <sup>A</sup>	-.19**	.12	.12	.06	.09	.07
EmOp <sup>B</sup>	.09	.16**	.00	.16**	.14*	.13
Coop <sup>C</sup>	.15*	.19**	.20**	.38***	.17**	.00
Ret <sup>D</sup>	.16**	.14*	-.29***	.05	.20**	.13*
AvAgg <sup>E</sup>	.05	.17**	-.01	.23***	.19**	.09
GenEg <sup>F</sup>	.02	.14*	.07	.17**	.14*	.18**
IntOr <sup>G</sup>	.10	.19**	-.17**	-.02	-.05	.18**
Zero-order r						
CMNI	-.33***	-.30***	-.26***	-.09	-.09	-.28***
Hetero <sup>A</sup>	-.15*	-.01	-.17**	-.01	-.01	-.23***
EmCon <sup>B</sup>	.02	-.40***	-.24***	-.09	-.01	-.26***
Self <sup>C</sup>	-.04	-.06	-.10	-.15*	-.15*	-.25***
Risk <sup>D</sup>	-.14*	-.22***	.36***	.02	-.13*	.10
Vio <sup>E</sup>	-.26***	-.19**	.12*	-.29***	-.13*	-.08
PWom <sup>F</sup>	-.15**	-.18**	.08	-.16**	-.08	-.19**
PlayB <sup>G</sup>	-.35***	-.09	.11	-.20**	-.20**	-.10
PmWrk	.02	-.06	.03	.26***	.26***	.04
Win	-.28***	-.04	.21**	-.21**	.08	-.11

N = 239. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

ALTM = total score for ALT-M; Homo = Homophilia; EmOp = Emotional Openness; Coop = Cooperation; Ret = Reticence; AvAgg = Avoidance of Physical Aggression; GenEg = Gender Egalitarian; IntOr = Intimacy Orientation; Hetero = Heterosexual Self-Presentation; EmCon = Emotional Control; Self = Self-Reliance; Risk = Risk taking; Vio = Violence; PWom = Power Over Women; PlayB = Playboy; PmWrk = Primacy of Work; Win = Winning; HH = Honest-Humility; EM = Emotionality; EX = Extraversion; AG = Agreeableness; CN = Conscientiousness; OE = Openness to Experience; ALTM Par = Partial correlations of ALT-M and scales when controlling for CMNI.

Subscripts indicate the conceptually related scales appropriate for comparison. For example, the subscript A indicates that difference between Homophilia and Heteronormative Self-Preservation should be noted.

As can be seen in Table 11, three of the five initially significant correlations between the ALT-M total score and the HEXACO subscales remained significant when removing the influence of the CMNI. However, given the number of correlational tests conducted, only those that are significant at  $p < .001$  should be considered to help attenuate the potential for type one error. This indicates that the ALT-M has a relationship with Agreeableness and Emotionality that is distinct from the CMNI. Several examples of this occur at the scale level as well. For instance, Cooperation maintains a moderately strong relationship with agreeableness. However, it should be noted that the correlation between Cooperation and its related scale on the CMNI, Self-Reliance, is not very strong, so it is reasonable that the two should have differential relationships with criterion variables. In addition, agreeableness and avoidance of physical aggression and reticence and extraversion maintain a great deal of their relationship when controlling for the influence of the CMNI.

The relationship between trait emotional intelligence and masculinity seems to be generally much smaller than that between personality and masculinity (Table 12). The only subscale on the TEIQue that shows several strong relationships with the ALT-M and the CMNI is Emotionality. When controlling for the influence of the CMNI, a few strong relationships are maintained between the ALT-M and the TEIQue, including Emotional Openness with Emotionality, Cooperation with the total score and Emotionality, and Intimacy Orientation with Sociality.

Table 12.

*TEIQue correlations and partial correlations with ALT-M and CMNI*

	TEIQ	Well Being	Self Control	Emotionality	Sociality
Zero-order r					
ALTM	.09	.01	-.02	.40***	-.16**
Homo <sup>A</sup>	.04	.01	-.06	.16**	-.01
EmOp <sup>B</sup>	.22***	.12	-.07	.48***	.05
Coop <sup>C</sup>	.31***	.21***	.18**	.40***	.09
Ret <sup>D</sup>	-.14*	-.15**	-.03	.11*	-.29***
AvAgg <sup>E</sup>	.01	-.07	.03	.20***	-.17**
GenEg <sup>F</sup>	-.03	.04	-.18**	.22***	-.15**
IntOr <sup>G</sup>	.10	.03	.08	.29***	-.13*
Partial r					
ALTM	-.03	.00	-.02	.11	-.15*
Homo <sup>A</sup>	.06	.05	-.06	.09	.05
EmOp <sup>B</sup>	.06	.01	-.02	.22***	-.02
Coop <sup>C</sup>	.23***	.15**	.13*	.33***	.04
Ret <sup>D</sup>	-.06	-.12	.02	.08	-.15*
AvAgg <sup>E</sup>	.01	-.07	.05	.11	-.11
GenEg <sup>F</sup>	-.07	.06	-.14*	.06	-.15*
IntOr <sup>G</sup>	-.09	-.04	-.04	.06	-.22***
Zero-order r					
CMNI	-.15**	.00	-.02	-.42***	.14*
Hetero <sup>A</sup>	-.01	.05	.01	-.16**	.06
EmCon <sup>B</sup>	-.30***	-.18**	.08	-.58***	-.09
Self <sup>C</sup>	-.31***	-.20***	-.14*	-.30***	-.09
Risk <sup>D</sup>	.15**	.10	.07	-.09	.31***
Vio <sup>E</sup>	.00	.00	.01	-.16**	.09
PWom <sup>F</sup>	-.06	.03	.10	-.30***	.07
PlayB <sup>G</sup>	-.20***	-.06	-.14*	-.31***	.02
PmWrk	-.06	.05	.03	-.19**	-.01
Win	.07	.12	-.02	-.06	.14*

N = 252. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

ALTM = total score for ALT-M; Homo = Homophilia; EmOp = Emotional Openness; Coop = Cooperation; Ret = Reticence; AvAgg = Avoidance of Physical Aggression; GenEg = Gender Egalitarian; IntOr = Intimacy Orientation; Hetero = Heterosexual Self-Presentation; EmCon = Emotional Control; Self = Self-Reliance; Risk = Risk taking; Vio = Violence; PWom = Power Over Women; PlayB = Playboy; PmWrk = Primacy of Work; Win = Winning; TEIQ = total score for TEIQue;

The final comparison between the ALT-M and the CMNI was made with the AQ.

As with the previous two examples, the two measures show fairly similar response patterns, though in opposite directions. Many of the strong relationships between the

ALT-M and Aggression are reduced when controlling for the CMNI, though some are maintained. For example, the total ALT-M and all its subscales apart from Gender Egalitarian and Intimacy Orientation remain significantly related to Physical Aggression. Further, Cooperation and Avoidance of Aggression remain significantly related to the total Aggression Questionnaire score and all of the subscales except for Hostility.

Table 13.

*Aggression Questionnaire correlations and partial correlations with ALT-M and CMNI*

	Aggression Questionnaire	Physical Aggression	Verbal Aggression	Anger	Hostility
ALTM	-.44***	-.59***	-.28***	-.23***	-.11
Homo <sup>A</sup>	-.26***	-.28***	-.19**	-.13*	-.14*
EmOp <sup>B</sup>	-.25***	-.32***	-.05	-.11	-.16**
Coop <sup>C</sup>	-.36***	-.35***	-.23***	-.25***	-.19**
Ret <sup>D</sup>	-.21***	-.37***	-.19**	-.08	.08
AvAgg <sup>E</sup>	-.51***	-.72***	-.28***	-.29***	-.10
GenEg <sup>F</sup>	-.17**	-.25***	-.09	-.05	-.05
IntOr <sup>G</sup>	-.22***	-.29***	-.19**	-.14*	.01
Par ALTM	-.10	-.29***	-.10	-.03	.18**
Homo <sup>A</sup>	-.10	-.15*	-.08	-.02	-.03
EmOp <sup>B</sup>	-.17**	-.22***	-.04	-.11	-.07
Coop <sup>C</sup>	-.28***	-.30***	-.22***	-.21***	-.08
Ret <sup>D</sup>	-.09	-.18**	-.15*	.00	.06
AvAgg <sup>E</sup>	-.34***	-.54***	-.15*	-.24***	-.03
GenEg <sup>F</sup>	-.01	-.07	-.02	.06	.03
IntOr <sup>G</sup>	-.06	-.11	-.11	-.06	.11
CMNI	.49***	.56***	.28***	.27***	.27***
Hetero <sup>A</sup>	.29***	.27***	.20***	.19**	.18**
EmCon <sup>B</sup>	.19**	.25***	.03	.04	.18**
Self <sup>C</sup>	.23***	.38***	.12*	.13*	-.05
Risk <sup>D</sup>	.42***	.59***	.25***	.18**	.12*
Vio <sup>E</sup>	.26***	.32***	.13*	.15*	.12*
PWom <sup>F</sup>	.23***	.29***	.16**	.13*	.06
PlayB <sup>G</sup>	.29***	.24***	.09	.17**	.33***
PmWrk	.14*	.05	.18**	.07	.18**
Win	.37***	.40***	.23***	.27***	.16**

N = 252. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . ALTM = total score for ALT-M; Homo = Homophilia; EmOp = Emotional Openness; Coop = Cooperation; Ret = Reticence; AvAgg = Avoidance of Physical Aggression; GenEg = Gender Egalitarian; IntOr = Intimacy Orientation; Hetero = Heterosexual Self-Presentation; EmCon = Emotional Control; Self = Self-Reliance; Risk = Risk taking; Vio = Violence; PWom = Power Over Women; PlayB = Playboy; PmWrk = Primacy of Work; Win = Winning;

Given the high degree of similarity between the CMNI and the ALT-M, as shown through the results of the convergent validity analysis, we should expect that any correlations between one and an external criterion variable would drop to zero when controlling for the influence of the other. However, while there are several examples of correlations weakening, several remain significant and strong. Overall, the results provide substantial evidence of construct distinctiveness, especially in light of the strong zero order correlations between the ALT-M scales and their related CMNI scales.

#### **4.4 Latent Profile Analysis**

A Latent Profile Analysis (LPA) was conducted on the ALT-M using Mplus v 7.4 (Muthen & Muthen, 1998-2015). The data were standardized to make them more easily comparable across the seven scales (e.g., Morin & Marsh, 2015). As mentioned, this procedure groups participants into common profiles or classes based on the similarity of patterns of responses. A number of model fit indices are used to determine the number of profiles that best explains the data. The indices used here include the Loglikelihood test, Akaike's Information Criterion (AIC; Akaike, 1987), the Bayesian Information Criterion (BIC; Schwartz, 1978), and the adjusted BIC (see Sclove, 1987), where lower values indicate a better fit and are compared across models. An approximation of the chi-square difference test (a likelihood ratio test), developed by Lo, Mendell, and Rubin (2001), is used to compare LPA models and determine the best number of classes. A significant result on this test (LMR LRT) suggests a significant improvement in model fit beyond a model with one fewer class. A bootstrapped version of this Likelihood Ratio Test (BLRT; see McLachlan & Peel, 2000) is also included and can be interpreted the same way. Another indicator of fit is Entropy, which indicates the precision of classification of

respondents into their most likely class, with a value close to 1 as ideal (Magidson & Vermunt, 2002). Finally, the number of individuals in each class is assessed to determine if participants have been well distributed among the groups; ideally each group should have at least 5% of the sample within it.

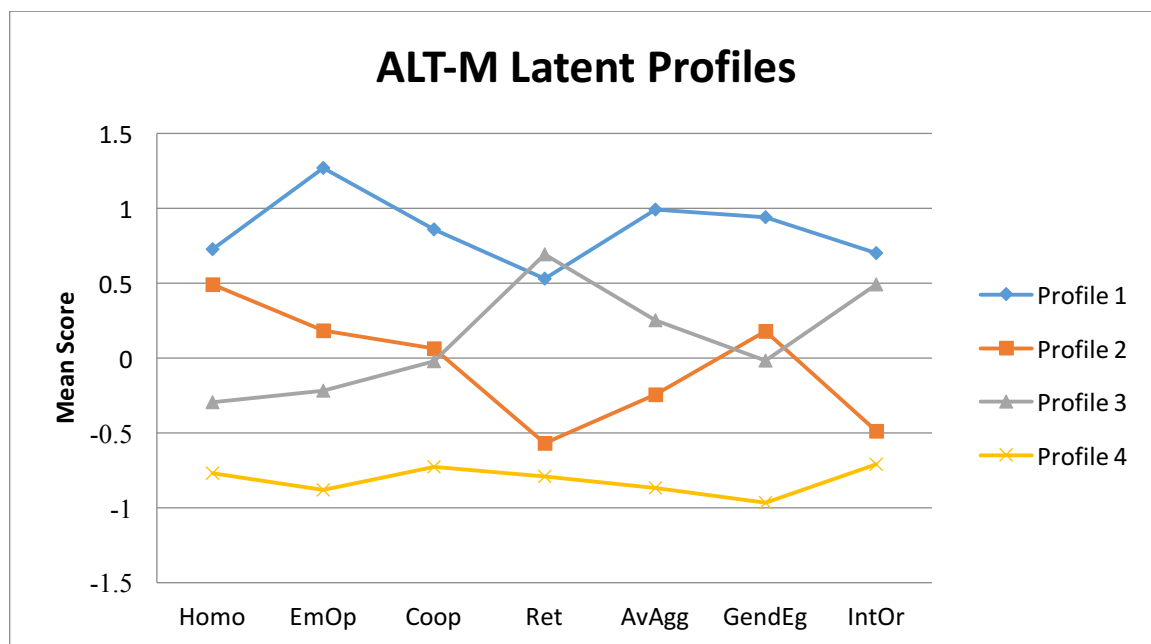
Models with one to five profiles were tested (Table 14). The model with four profiles was selected based on the combination of fit indices described above. Although the LRT for the five-profile solution was not significant, the other indices suggested the four-profile solution was more acceptable. More specifically, the AIC, BIC and aBIC dropped substantially from three to four, but not from four to five. Further, moving to the five-profile solution did not greatly improve fit on any of the indices except for a slight improvement in Entropy, but one of the classes had fewer than 5% of the cases. Based on all these considerations, the four-profile model was deemed the most appropriate.

Table 14.  
*Latent Profile Analyses*

Fit Index, Test & Classification Indices	Number of Profiles				
	1	2	3	4	5
Loglikelihood	-4876.892	-4684.417	-4629.682	-4574.303	-4536.594
AIC	9781.783	9412.835	9319.363	9224.606	9165.187
Adjusted BIC	9796.098	9435.329	9350.037	9263.459	9212.220
Lo-Mendell- Rubin LRT <i>p</i> -value	-	377.337 <i>p</i> = .0003	107.307 <i>p</i> = .4963	108.568 <i>p</i> = .0631	73.927 <i>p</i> = 0.3552
Bootstrapped LRT <i>p</i> -value	-	384.949 <i>p</i> = .0000	109.471 <i>p</i> = .0000	110.758 <i>p</i> = .0000	75.418 <i>p</i> = .0000
Entropy	-	0.662	0.781	0.678	0.711
Number of people in each category	491	231, 260	187, 293, 11	100, 148, 166, 77	85, 154, 142, 7, 103

AIC= Akaike's Information Criterion; Adjusted BIC= Bayesian Information Criterion; LRT=Likelihood Ratio Test

Figure 1 depicts the four profiles in terms of their standardized mean scores on the seven ALT-M scales. As can be seen, there appears to be some distinct profiles that emerged from this model. We can describe these profiles by contrasting their mean scores in terms of elevation, shape and scatter (Meyer & Morin, 2016). Elevation refers to the mean scores across the seven scales, indicating whether a profile shows a generally higher or lower level than the other profiles. Shape refers to qualitatively different profiles and is essentially equivalent to an interaction such that the profiles do not display parallel patterns. Shape is therefore most useful in terms of comparisons between the profiles. For example, if all the profiles show a similar shape but just at different elevations, this would not provide much evidence of qualitatively different profiles, but simply a pattern of high vs. low scores across the scales. Unlike shape and elevation, scatter focuses on variability of the scores within each profile.



*Figure 1.* Standardized scale scores for four-profile solution.

Number of individuals and proportions in each profile: Profile 1, n=77 (15.9%), Profile 2, n=148 (28.9%), Profile 3, n=166 (34.8%), Profile 4, n=100 (20.4%). Homo = Homophilia, EmOp = Emotional Openness, Coop = Cooperation, Ret = Reticence, AvAgg = Avoidance of Physical Aggression, GendEg = Gender Egalitarian, IntOr = Intimacy Orientation.

Profile 1 shows the highest elevation, with scores that are generally high on all of the scales, ranging from approximately .5 to 1.3 standard deviations (SDs) above the Mean. Its scores are the highest on every scale except for Reticence, on which Profile 3 obtains a slightly higher score. It has a unique shape compared with the other scales and shows some scatter which can be perceived visually and in the range between its lowest and highest score. Looking at the particular pattern of scores on the specific scales, this profile could be described simply as “Progressive Masculinity.” However, there is some variability among the scales which suggests a more nuanced profile. Specifically, Emotional Openness is by far the highest score and Reticence is slightly lower than all the other scales (though still high compared to the other profiles).

Compared with the other profiles, Profile 2 seems to show a centralized elevation, with scale scores ranging from -.5 to .5 SDs. In terms of shape, it is somewhat similar to Profile 1 but most strikingly, it represents a mirror image of Profile 3. Profile 2 shows quite a bit of scatter, with scores both well above and well below the mean. Relative to the other scores in the profile, Profile 2 is high on Homophilia and quite low on Reticence and Intimacy Orientation. Avoidance of Physical Aggression is also somewhat low, while the remaining three scales all hover above the mean. This seems to represent individuals who are sexually open (they prefer casual sex and are comfortable with homosexuality), are somewhat prone to aggressive behaviour and who enjoy wild or risky environments. This profile will be called “Fraternity Masculinity” as it seems to represent the stereotypical attitudes and behaviours associated with young men in fraternities.



As previously mentioned, Profile 3 is very much an inversion of Profile 2, though its elevation is a little bit higher on average, with scores ranging from  $-.4$  to  $.6$  SD above the mean. Like Profile 2, Profile 3 shows quite a bit of scatter. This profile is relatively high on Reticence and Intimacy Orientation and low on Homophilia and Emotional Openness. The remaining scales are around the mean though Non-Aggressive is slightly higher (around  $.25$  SD above the Mean). This seems to represent politically conservative and possibly religiously driven values, especially regarding attitudes surrounding sexuality. This profile will be called “Conservative Masculinity” to represent both the political and religious values that seem to align with this group.

Finally, Profile 4 shows the lowest elevation, the simplest shape, and very low scatter. Participants in this profile show a fairly uniform response pattern across the scales and their average score is lower than on every other profile. This profile will be labeled “Traditional Masculinity” to indicate its similarity to the typical traditional profile for which other masculinity measures were designed.

**4.4.1 Digging deeper into the meaning of the profiles.** In addition to looking at the shape of the profiles, we can also look at how they correlate with key variables. For example, we can see if there are substantial differences between the profiles in terms of their demographic composition. We could also look at profile differences in the related scales, such as scores on the Aggression Questionnaire. Due to the somewhat homogenous nature of the sample on common demographic variables such as age and sexual orientation, I only investigated the differences in ethnicity and faculty, as well as differences on the Aggression Questionnaire due to the conceptual relationship between masculinity and aggression that has been shown in the literature.

Chi-square tests of association were used to assess the relations between the profiles and the demographic variables. Due to the small number of participants in some of the demographic categories, some categories were collapsed into one broader ethnic group and those who could not reasonably be combined with a conceptually similar group were removed. This resulted in five groups: White/Caucasian (N = 214), South Asian, e.g., East Indian, Pakistani, Sri Lankan, etc. (N = 76), Chinese (N = 104), Arab or West Asian, e.g. Iranian, Afghan, etc. (N = 28), and Korean (N = 23). This configuration resulted in no issues with the expected count (only 15% of cells had an expected count less than 5) and in a significant Chi Square,  $\chi^2(12) = 25.823$ ,  $p = .011$ . A cross-tabulation table of the ethnic groups by profiles with counts and proportions of individuals within each profile for each ethnic group are provided in Table 15.

Table 15.

*Proportions within masculinity profiles for five ethnic groups*

	White	Chinese	Korean	South Asian	Arab/ West Asian	Total
<b>Progressive</b>						
Count	38	14	5	11	5	73
% in profile	52.1	19.2	6.8	15.1	6.8	100
% in ethnicity	17.8	13.5	21.7	14.5	17.9	16.4
<b>Fraternity</b>						
Count	50	43	7	23	9	132
% in profile	37.9	32.6	5.3	17.4	6.8	100
% in ethnicity	23.4	41.3	30.4	30.3	32.1	29.7
<b>Conservative</b>						
Count	90	19	7	28	7	151
% in profile	59.6	12.6	4.6	18.5	4.6	100
% in ethnicity	42.1	18.3	30.4	36.8	25.0	33.9
<b>Traditional</b>						
Count	36	28	4	14	7	89
% in profile	40.4	31.5	4.5	15.7	7.9	100
% in ethnicity	16.8	26.9	17.4	18.4	25.0	20.0
<b>Total</b>						
Count	214	104	23	76	28	445
% in profile	48.1	23.4	5.2	17.1	6.3	100
% in ethnicity	100	100	100	100	100	100

One way to interpret the percentage of individuals in each group is to compare the percentage of individuals in each profile from one ethnic group to the overall pattern of individuals in each profile. For example, 16.4% of the participants are in the Progressive Masculinity profile and most ethnic groups have a similar percentage in that profile, though Koreans have a slightly higher percentage and Chinese a slightly lower. However, due to the discrepancies in sample size between the populations, such results aren't that telling, especially for smaller groups, such as the Arab/West Asian or Korean groups which have sample sizes lower than 30. However, some of the most striking differences between expected proportions and actual proportions for some of the groups include the contrast between Conservative Masculinity and Fraternity Masculinity for the Chinese group, which are much lower and much higher respectively than expected when compared with the overall group.

We can also look at the results in an alternative way, to see whether or not the ethnic groups are proportioned the way that would be expected given their sample sizes. For example, the White group represents 48% of the sample and so within each profile, they should represent a similar amount. As mentioned, due to their low sample sizes, this is not too meaningful when looking at the Korean or Arab/West Asian groups. However, the South Asian group shows a very close pattern within each profile as would be expected. The major differences occur between the Chinese and White groups, which also have the largest sample sizes. The Chinese group has more Traditional and Fraternity Masculinities and less Conservative than should be expected given the proportion of the sample they represent. Conversely, the White group seems to show an opposite pattern,

having less Fraternity and Traditional and more Conservative Masculinities than would be expected.

A second Chi-square test assessed the relation between faculty and profiles. Again, due to low response rates in some of the faculties, several were removed and the test was done on five groups: Management and Organizational Studies (BMOS), Bachelor of Health Sciences, Kinesiology, Science, and Social Science. The resulting test was non-significant,  $\chi^2(12) = 15.775$ ,  $p = .202$ , suggesting there is no relationship between faculty and masculinity type. Most faculties had similar patterns of proportions within the profiles as the overall group: the most common profile was Conservative Masculinity, followed by Fraternity Masculinity, then Traditional Masculinity, and finally Progressive Masculinity.

Finally, to assess differences in Aggression levels among the 4 profiles, a one-way ANOVA was conducted using the total Aggression Questionnaire score as the outcome variable. The results were significant,  $F(3, 248) = 14.225$ ,  $p < .001$ , suggesting that there is indeed a significant difference between the profiles in terms of their aggression scores. The Means and SDs of these scores can be found in Table 16.

Table 16.  
*Average scores on Aggression Questionnaire*

	N	Mean	SD
Progressive	43	2.85	.459
Fraternity	80	3.30	.568
Conservative	73	3.20	.521
Traditional	56	3.54	.557

Notably, the Progressive profile has the lowest score which in Tukey HSD post-hoc analyses was found to be significantly different from all other profiles. The only non-

significant difference found was between the Conservative and the Fraternity masculinities, suggesting that both are quite similar in terms of their aggression.

## CHAPTER 5: DISCUSSION

### 5.1 Evaluating the Project Objectives

The first objective of this project was to create a new measure of masculinity that was valid and original, satisfying the first three hypotheses laid out in the introduction. The first hypothesis was that my proposed scales would be revealed through a combination of factor analytic techniques, allowing for some modifications. Of the nine facets proposed to represent a progressive form of alternative masculinity, seven were supported through a combination of EFA, ESEM, and CFA, satisfying the first hypothesis. As part of this objective, a larger initial pool of items was created, and it was possible to select a subset of the best items based on item analyses. As a result, slight adjustments to some of the names and definitions of the scales was required, but overall they remained quite consistent with the initially proposed constructs.

The final scales are: Homophilia, Emotional Openness, Cooperation, Reticence, Avoidance of Physical Aggression, Gender Egalitarian, and Intimacy Orientation. These scales conform to a clear and unambiguous factor structure, and they show good reliability and an adequate level of distinctiveness based on their pattern of inter-correlations. It is clear that the next stage of this research will be to collect another large sample of respondents to cross validate the factorial structure and reliability of these scales. Based on the rigour that was applied throughout the development of this measure, from promoting content validity in a preliminary study and discriminant validity at the item analysis level, it is reasonable to expect that the properties found in this study will hold with future replications.

The second hypothesis was that the measure would show convergent and discriminant validity when compared with specific hypothesized subscales of the CMNI (Parent & Moradi, 2009). The ALT-M did satisfy this hypothesis, revealing evidence of convergent and discriminant validity when compared with its most conceptually similar measure, the CMNI. All ALT-M scales proposed to correlate the highest with specific scales from the CMNI did (with one exception mentioned below), while at the same time revealing a pattern of much smaller correlations with the other CMNI scales, thought to be less conceptually overlapping. Together, these two patterns show evidence of convergent and discriminant validity.

The only exception to this was the scale Cooperation which did not correlate highly with its theoretic counterpart from the CMNI, Self-Reliance. Looking closely at the items for each scale, the reasons for this become somewhat apparent. The Self-Reliance items all focus on not wanting to ask others for help, while the items in the Cooperation scale deal more with wanting to help others. While similar, these constructs seem to be somewhat independent, explaining why the relationship was not as strong as I had anticipated. As an interesting aside, Self-Reliance had a stronger negative relationship with Emotional Openness than with Cooperation. This was not initially expected but can be understood by a common vulnerability component that may be central to both scales. Further research into the relationship between those constructs is warranted.

The third hypothesis was that the ALT-M would possess construct distinctiveness in relation to the CMNI. Despite the ALT-M's obvious relationship with the CMNI, it was important to show evidence that it would capture something unique. The ALT-M,

and its facets, was shown to correlate uniquely with various criterion variables including personality (Ashton & Lee, 2009), trait emotional intelligence (Petrides, 2009), and aggression (Buss & Perry, 1992), after taking into account the influence of the CMNI.

The second objective of this project was to use a quantitative method to explore the extent that qualitatively different masculinity profiles exist, offering support to the social constructionist notion of multiple masculinities proposed to exist within the Gender Role Strain Paradigm (Pleck, 1982 and Levant & Pollack, 1995). The fourth hypothesis for this project was derived from this objective, proposing that clearly distinct masculinity profiles would be found via Latent Profile Analysis (LPA). An LPA satisfied this hypothesis by revealing a good fitting four-profile model of masculinity that differed in elevation, scatter and shape. Rather than just consisting of high, medium, and low levels of progressive masculinity (i.e., elevation), these profiles showed distinct shape patterns, similar to interactions, that could be clearly differentiated from another and that fit into somewhat stereotypical frameworks of different masculine ideals. These profiles were labeled Progressive, Fraternity, Conservative, and Traditional Masculinity based on their patterns of responses across the seven ALT-M scales.

The final hypothesis argued that the profiles found in the LPA would be differentially related to external variables. Preliminary exploratory analyses of these profiles did show some differences in terms of their sample compositions. Analyses of the relations between the profiles and demographic variables revealed some unexpected proportions, especially for the Chinese and White ethnic groups. For example, the Chinese group had more Traditional and Fraternity Masculinities and less Conservative than was expected. Further, a one-way ANOVA found a significant difference in trait



aggression levels between the four profiles, with post-hoc analyses finding significant differences between several of the groups. Thus, all hypotheses for this study were satisfied.

## **5.2 Strengths and Weaknesses**

Before discussing the strengths and implications of this project, it is important to first note some of the weaknesses, both inherent to survey studies generally and to this project in particular. First, such projects depend on self-report evidence collected from online samples, which may introduce measurement error due to socially desirable responding, impression management, or careless responding. In terms of careless responding, I used a standard procedure of including focus-check items in the survey and removing participants who did not appear to participate with their full attention. There was no social desirability check used in the measure, so it is possible participants did not always answer honestly. However, there was no strong motivation for social desirability, given the assurance of anonymity outlined in the Letter of Information, so this may not have posed much of an issue.

Another weakness is that the sample used was a fairly homogenous group of young men in terms of age, life-stage, sexual orientation, and relationship status, though there was some variety in terms of ethnicity and faculty. Future work with a less homogenous sample would be useful to determine how well the ALT-M works in different populations of men and whether or not it can replicate the factor structure. In fact, distinctly different populations of men may reveal different masculinity profiles that would be worth investigating.

The only hypothesis that did not fully pan out was the first, in that rather than my nine proposed scales working, only seven fit the final factor structure. Indifference towards Status was removed early on due to its inability to conform to a one- or two-factor structure. I believe the problem with the Indifference towards Status scale stemmed from its theoretical development. Originally, the scale was defined as having a laid-back attitude to career and personal status and not thinking that having a high-status career is central to self-worth and identity. In combination with this, some of the items revolved around family life, others around wealth or perceptions of wealth, and others around career. Upon reflection, these may have been conflated issues leading to an improperly conceived construct. While each component of the scale may represent important aspects of progressive masculinity, it is possible they should be considered individually. Further research, either found within the existent literature or collected from focus groups and interviews, could help clarify this issue.

Pro-Femininity was also removed from the measure but at the later ESEM item analysis stage, due to its very high cross loadings with several other scales within the measure. Though it performed well in the initial unidimensionality analysis, it was too highly correlated with other scales. The items within the Pro-femininity scale were better or equally well captured by a number of scales, such as Homophilia, Emotional Openness, and Cooperation. Items often focused on behaviours, asking how appropriate certain activities, jobs, or interactions were for men or boys. The high cross loadings of these items suggest that rather than being a unique construct within the larger frame of progressive masculinity, pro-femininity may be a central underlining variable that ties the

whole construct together. Future work to assess the centrality of pro-feminine attitudes and behaviours to the centrality of progressive masculinity should be undertaken.

Overall, this project was built on a strong theoretical and methodological foundation that helped contribute to its success. The idea of identifying an alternative form of masculinity was built not only on the assumptions inherent to current masculinity research, but on the evidence of its existence from the qualitative literature. A thorough process of scale and item development which involved a study of content validity helped to ensure that facets of this alternative masculinity would be well represented. This strong foundation was supplemented by the rigorous analytic approach that followed it. Rather than conducting an EFA followed by validity analysis, as is fairly common in measure development, I conducted a combination of EFA, ESEM, and CFA, not with the aim of exploring or confirming the measurement structure, but with the aim of applying increasingly more restrictive models. The EFA, the least restrictive model, was conducted first, and only on individual scales. It was not used to determine the factor structure of the measure as a whole. The ESEM followed the EFA and was conducted on the whole measure, its targeted rotation allowed a hypothesized structure without forcing cross-loadings at zero, therefore providing a more realistic model than a CFA. Finally, the most restrictive model, a CFA, with all cross-loadings set at zero, was conducted and the model assessment generated a reasonable fit. These detailed processes of scale development and analysis are what helped contribute to both the validity and the construct distinctiveness of my measure.

A specific strength of this project was the successful use of a Latent Profile Analysis, which is a fairly novel approach in masculinity research. The distinct profiles

found in the ALT-M suggest that the measure is not only focused enough to present clearly definable facets of masculinity, but it is also broad enough to represent four unique masculinities. Rather than simply capturing different levels of the same profile, that is a low, medium or high score on progressive masculinity, it captured four highly individualized profiles.

### **5.3 Implications**

This project has both practical and theoretical implications for the understanding of masculinity. Practically speaking, it provides a new tool that can be used for masculinity researchers and for those interested in how masculinity relates to numerous variables and outcomes. As noted in the introduction, much research has been conducted capturing the negative consequences associated with conforming to traditional masculine norms (Addis, Reigeluth, & Schwab, 2016). By providing an original measure of progressive masculinity, rather than, or in addition to, the more commonly assessed traditional masculinity, we can derive a fuller picture of these relationships. Beyond its practical use for future research, the results of this study also have immediate theoretical implications. Not only was a unique representation of masculinity captured through the factor structure of the measurement model, but the existence of multiple distinct masculinity profiles was found as well. Both of these findings provide empirical evidence for the long-held assumption in masculinity research that many diverse masculinities exist (Thompson and Bennett, 2015).

These implications were anticipated when laying out the objectives of this project, but there are also less obvious implications that arose out of some of the analyses involved in this project. As mentioned, the relationship between masculinity and

aggression has been assessed previously in the literature (e.g. Amato, 2012). In fact, it is often a scale in masculinity measures, but the relationship between masculinity and personality or trait emotional intelligence has not been addressed. Using these measures as criterion variables for the construct distinction component of this project was largely exploratory, to see what, if any, relationships might exist between them and masculinity. Fortunately, some interesting relationships did emerge.

Perhaps the most interesting results arose from the comparison of masculinity to personality traits. Some clear relationships were found between certain personality traits represented in the HEXACO and the total scores and subscale scores of both masculinity measures. The strength of the relationships was fairly comparable between the ALT-M and CMNI total scores, but there were some unique relationships, such as the CMNI correlating significantly and modestly with Extraversion, and the ALT-M correlating significantly and modestly with Agreeableness and Conscientiousness. The significant relationships between the ALT-M and both Agreeableness and Conscientiousness provides some additional evidence that this is a measure of progressive attitudes. According to the developers of the HEXACO, an agreeable person is forgiving, lenient, willing to compromise, and can easily control their temper, and a conscientious person is organized, disciplined, deliberate and careful (Ashton and Lee, 2007). This is corroborated by the fact that the relationship between these constructs and the CMNI is negligible, showing the ALT-M is in fact picking up on something distinct from the CMNI, namely personality traits that are conceptually related to a progressive masculinity construct.

When moving from the total scores to the subscales of the ALT-M and CMNI, the distinction between them still exists where expected, though the difference is somewhat lessened. For the ALT-M, agreeableness and conscientiousness seem most similar to cooperation, reticence, and avoidance of aggression, and in fact they do show moderately strong relationships. For the CMNI, the respective subscales are self-reliance, risk-taking, and violence, which, though showing a stronger relationship than the total score (especially violence, which has quite a strong negative relationship with agreeableness), still have a weaker relationship with these personality traits than the ALT-M. Several other strong and interesting relationships between personality and masculinity can be found here, but those are beyond the scope of this project. For example, primacy of work from the CMNI shows a moderately strong relationship with agreeableness and conscientiousness but as there is no equivalent scale in the ALT-M, this relationship is informative but of little use here.

The main takeaway here is that masculinity and personality do seem to be related to a certain degree. This relationship may have larger implications for our understanding of masculinity as it could suggest that masculinity is partially a trait-based construct, which would fly in the face of currently accepted theorizing. Indeed, some of the components of masculinity, like aggression, are often considered traits rather than learned behaviours, so it is possible that masculinity may be some combination of trait and learned attributes. For example, an individual may be naturally extraverted which could increase his willingness to take risks, which just so happens to be a major component of traditional masculine norms in his society. Therefore, this individual automatically fills certain masculine criteria more seamlessly than an introverted individual, though both

may have been socialized with the same masculine ideals. To push this example a little further, perhaps the introverted individual grows up seeking alternative examples of masculinity and admiring unconventional male role models, thereby choosing to embrace a non-traditional form of masculinity. Both men have in a sense “learned” their masculinities, but what pushed them to learn it was largely influenced by their innate personality traits. The idea that masculinity is akin to certain personality traits was represented in the Bem Sex Role Inventory (Bem, 1974), but masculinity measures and research has largely moved away from this interpretation of masculinity. Perhaps it is time to reconsider this relationship once more. At the very least, it may give us a broader understanding of how individuals develop their masculine identities.

Another implication that can be taken away from this research is the findings from the Latent Profile Analysis. Beyond the qualitative descriptions of distinct masculinities that these profiles offer, it is interesting to note the proportions of each of these masculinities within the sample. The majority of participants fell into Conservative Masculinity and the smallest number fell into the Progressive Masculinity group. Notably, Traditional Masculinity only contains the second largest proportion of respondents, which is unexpected given its predominance in the literature. This offers some evidence that the dominant masculinity may be somewhat different than what’s currently touted as the dominant one. Alternatively, perhaps Canadian traditional masculinity is different from American, or perhaps this sample consisted of unrepresentative proportions. These profiles offer plenty of fodder for future research, even in terms of assessing why exactly certain distinctions within and between the

profiles exist. Overall, this project presents some interesting findings that both support and bring into question some of the major assumptions in masculinity research.

#### **5.4 Future Directions**

As noted, an important next step for this research will be to collect a new sample and test the reliability of this measure and of the profiles presented. Trying to get at a more diverse population would be ideal, one that contains men of different ages, sexual orientations, education levels, and life stages would offer a more nuanced look into the multiple masculinities. More broadly speaking, future research on the topic of masculinity should dive deeper into the different ways that masculinity is expressed and the consequences of that expression. This study provided quantitative evidence for the existence of distinct masculinities, but determining that they exist is just the first step. Now we need to look at whether or not these differences matter by assessing their relationships and even influences on negative outcomes. Some preliminary evidence that it does was offered at the end of Chapter 4, where it was shown that the masculinity profiles significantly differed in terms of their trait aggression levels, specifically the progressive form of masculinity was the least aggressive of all four profiles. Future research should follow this lead, assessing the differential impact masculinities have on men, their relationships, and society in order that those negative consequences might be lessened.

Masculinity has become a frequent talking point among liberal pundits lately. Like masculinity researchers of the past several decades, journalists, educators, and mental health workers are growing concerned that traditional masculine ideals are responsible for or related to some current negative societal issues. Currently, a primary



concern is the rise of the alt-right, a nationalist (often white-supremacist) conservative movement in many Western nations whose ranks are swollen with young, white, often college-educated, males. One influential factor in this and other similar movements across Europe is a feeling of disenfranchisement and of getting left behind for preference of other groups, typically racial minorities or women. One New York Times article (Miller, C., 2017) argued that difficulty transferring from a highly masculine but diminishing factory-type job to a flourishing yet feminine service sector job may partly explain the high unemployment rates of this group. The similarity of this group's values to traditional notions of masculinity begs the question of how influential masculinity can be on one's political affiliations.

In contrast to the rise of the alt-right there is also a rising liberal class of young men who strongly support a feminist agenda, promoting modern, pro-social conceptions of masculinity. These socially positive and liberally progressive forms of masculinity could offer benefits for men and society that are currently upset by more traditional norms of masculinity. By further analyzing the correlates, antecedents, and outcomes of modern and alternative representations of masculinity, we may be able to mitigate some of those negative effects, like reducing intimate-partner abuse, improving psychological health in men, or helping to bolster employment rates by making stereotypical feminine work more appealing.

Of course, politically motivated forms of masculinity are not the only form of masculine diversity we can expect to see. Culture, ethnicity, language, sexual orientation, and socioeconomic status are just a few of the variables that can influence individuals' understanding and expression of masculinity. The directions for masculinity

measurement are plentiful and it would be impossible to capture all forms of alternative masculinity with one scale. My project focused on a broadly progressive conception of masculinity over the more commonly measured traditional form, but several alternative masculinities have yet to be accessed. The mapping of multiple masculinities represents a new and promising path in the field of masculinity research and for the lives and well-being of men.

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## Appendix A: Demographics of sample

Ethnicity	Number	Percentage
White/Caucasian	214	43.1
South Asian (e.g., East Indian, Pakistani, Sri Lankan)	74	14.9
Chinese	107	21.5
Black	11	2.2
Filipino	3	.6
Latin American	7	1.4
Arab	19	3.8
Southeast Asian (e.g. Vietnamese, Cambodian, Laotian, Thai)	11	2.2
West Asian (e.g. Iranian, Afghan)	8	1.6
Korean	24	4.8
Japanese	1	.2
Aboriginal (First Nations, Metis, or Inuk)	2	.4
Other	16	3.2
<b>Faculty</b>		
Arts & Humanities	3	.6
Management & Organizational Studies	71	14.3
Engineering	1	.2
Bachelor of Health Sciences	23	4.6
Kinesiology	39	7.8
Information and Media Studies	4	.8
Music	1	.2
Science	267	53.7
Social Science	81	16.3
Other	5	1
<b>Year of Study</b>		
1	456	91.8
2	21	4.2
3	13	2.6
4	5	1
5 or higher	2	.4
<b>Marital Status</b>		
Single	395	79.5
In committed relationship	98	19.7
Married	0	0
Common Law	2	.4
<b>Sexual Orientation</b>		
Straight	475	95.8
Gay	5	1
Bisexual	13	2.6
Pansexual	1	.2
Asexual	2	.4

## Appendix B: Definitions of high and low scores on the original ALT-M

<b>Scale</b>	<b>High Score Definition</b>	<b>Low Score Definition</b>
<b>Pro-Femininity</b>	Appreciating feminine behaviours, qualities and activities; considers such behaviours acceptable for males	Avoiding and expressing dislike for feminine behaviours, qualities, and activities
<b>Attitudes Towards Sex and Intimacy</b>	Believes sex is a special, private, and intimate experience and should be treated with care	Sex is used as a status symbol; sex is a physical, not an emotional, experience; seen as conquest and competition for popularity
<b>Freedom of Emotional Expression</b>	Believes men should be allowed to express a wide range of emotions including sadness and fear; feels comfortable expressing emotions.	Uncomfortable showing emotions in the presence of others and believes that men who show various emotions such as sadness and fear are weak
<b>Gender Egalitarian</b>	Believes and promotes gender equality and has mutual respect for men and women alike	Has sexist attitudes towards women; disapproves of feminist agendas
<b>Homophilia</b>	Being supportive of gay men and their equality; being comfortable interacting with gay men; and unconcerned about being perceived as gay by others	Disapproving of gay men and their rights; uncomfortable interacting with gay men; and actively wanting to avoid being perceived as gay
<b>Indifference Towards Status</b>	Laid-back with regards to career and personal status; doesn't think having a high-status career is central to self-worth and identity	Concerned with having high social and economic status; career and association with high-status people or things is a central value
<b>Interdependence</b>	Values cooperation and equality (rather than dominance) for their own sake (i.e. doesn't simply use cooperation as a means to get ahead)	Highly values dominance and has an unhealthy reverence for independence.
<b>Diplomacy</b>	Disapproves of aggression; will always try to use	Thinks it's natural and justifiable for men to act

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	diplomatic means to resolve an argument rather than get in a fight	aggressively; believes that in certain situations violence is the best answer
<b>Self-Restraint</b>	Mostly cautious, disciplined, gentle, and values self-restraint; doesn't take excessive risks to prove masculinity	Thinks risk-taking and living dangerously is important and enjoyable; is daring and defiant

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## Appendix C: Form for content validity analysis

## Alternative Masculinity Measure

The Alternative Masculinity Measure (ALT-M) is aimed at men of age 18 years and older, and its purpose is to capture their personal beliefs about masculinity by asking them questions about their attitudes, affect, and behaviour. It consists of 9 scales, each of which focuses on a specific quality regarding modern ideas of alternative masculinities. The following preliminary pool of items provides the title of each proposed scale, definitions of high scores and low scores for each scale, and the corresponding list of items (items marked with an \* will be reverse scored).

Please rate the relevance of each item on its proposed construct (by inserting numbers next to items) using a 5-point Likert scale ranging from:

**1 (not at all relevant)..... 3 (somewhat relevant)..... 5 (highly relevant)**

Please feel free to include comments or suggestions anywhere in the questionnaire or at the end.

We thank you in advance for taking the time to assess it for quality and relevance.

### Homophilia

*High score* = Accepting and supportive of homosexual people and unconcerned about potentially being misperceived as gay

*Low score* = Homophobic and actively wanting to avoid being perceived as gay

Items	Score
I would be comfortable and supportive if a close friend of mine told me he was gay.	
If I heard someone making homophobic comments, I would probably tell them to stop.	
Gay men can be masculine.	
Another man's sexual orientation is none of my business.	
Gay people deserve as much respect as any one else.	
I would be perfectly comfortable with having gay men on the same sports team as me.	
I would be comfortable in a course taught by a gay male teacher.	
*Gay men should not be allowed to teach young school children.	
*I sometimes worry whether or not a shirt looks "gay" before I purchase it.	
*I avoid certain behaviours, such as crossing my legs, because they might make me seem gay.	
*I would be very upset if someone incorrectly assumed that I was gay.	
*I would worry that I might be questioned about my masculinity if I had many gay male friends.	

*Television and movies show too many gay couples lately.	
*I tend to be uncomfortable around gay people.	

### Comments about the Homophilia Scale:

#### Pro-Femininity

*High Score* = Appreciating feminine behaviours, qualities and activities; considers such behaviours acceptable for males

*Low Score* = Avoiding and expressing dislike for feminine behaviours, qualities, and activities

Items	Score
Sometimes it's hard to tell if a behaviour is feminine or masculine.	
I can see myself enjoying activities that are seen as feminine, such as yoga or baking.	
I would support a male friend if he wanted to pursue a typically feminine job such as a nurse or kindergarten teacher.	
I believe that all men have a feminine side.	
I feel encouraged when I see other men doing feminine activities.	
It's fine for a man to prefer things like knitting or cooking to things like cars and football.	
Fathers are capable of being just as nurturing as mothers.	
*I avoid doing things that are considered feminine.	
*It's inappropriate for boys to play with Barbie or other girly dolls.	
*I feel slightly feminine if I have to cook or clean for myself.	
*If I lived with a partner I would avoid doing laundry, ironing or dusting.	
*A good synonym for feminine is "weak"	
*Men who spend a lot of time and money on their appearance are too feminine.	
*It's more important for women than men to eat healthily and exercise. (not sure what information you get from this item)	

### Comments about the Pro-Femininity Scale:

#### Freedom of Emotional Expression

*High Score* = Believes men should be allowed to express a wide range of emotions including sadness and fear; feels comfortable expressing emotions.

*Low Score* = Uncomfortable showing emotions in the presence of others and believes that men who show various emotions such as sadness and fear are weak.

Items	Score
I feel comfortable talking to my male friends about personal things.	
I know that I can get emotional support from my male friends.	
I'd be willing to seek emotional support from friends or family if I thought I needed it (not sure what this part adds....)	

I think it's usually good to express your emotions. (I would avoid using these qualifying words, since the person already rates how much he or she agrees or disagrees...)	
It's important for men to be in touch with their feelings and emotions.	
It's fine for children to see that their father has weaknesses.	
It would be nice if men had more acceptable and less aggressive outlets for their emotions.	
*I would be too embarrassed to seek emotional or psychological help from a professional.	
*If a male friend told me that he was sad, I would think he was weak.	
*Men should aim to always be cool and rational.	
*I think it's un-masculine when male political leaders or sports stars cry in public.	
*I don't want my close friends or family members to see me when I'm sad or afraid.	
*Crying in front of a woman would be very embarrassing.	
* Many modern men are too sensitive and weak. (are sensitive and weak the same? What if the respondent only thinks that men are either too sensitive or too weak?)	

### Comments about the Freedom of Emotional Expression Scale:

#### Interdependence

*High Score:* Values cooperation and helping others over dominance; caring, considerate, and supportive; relationships (personal and work-related) are built on equality and mutual respect, even when assuming a leadership role; seeking and giving help is valued

*Low Score:* Driven by dominance and competition; unwilling to cooperate; resists help or dependence; values independence over interdependence; defiant sometimes to the point of aggression; behaves this way almost all of the time in all relationships

Items	Score
Knowing how to cooperate with others is an important skill to have.	
It is important to me to show respect to my peers and colleagues.	
My friends and family can count on me when they need help.	
I think collaboration is more important than competition. Why do some items have "I think" and some not? Why do some have "I like" while others have "I love"? Will that confuse the person or affect his responding?	
I think it's important to be social and to get along well with others.	
I like to freely offer help when I think someone needs it.	
I try to value other people's (should be peoples') opinions as much as my own.	
*Life is about winning.	
*Competition is necessary for success.	
*It's important to me that I am the one who sets rules in my relationships.	
*Men who spend too much time caring or helping others do not get ahead.	
*I love to beat others at any competitive game.	

*I should be able to get where I want in life without anyone's help.	
*I hate when people ask me if I need help.	

### Comments about the Interdependence Scale:

#### Indifference towards Status

*High Score:* Laid-back with regards to career and personal status; doesn't think having a high-status career is overly important or central to self-worth and identity

*Low Score:* Concerned mainly with values such as social status and prestige; overly ambitious; considers achieving high professional status as central in life

Items	Score
A man's career says little about the kind of person he is.	
I want a job or career that will provide a lot of free time for family or personal activities.	
I would be fine to stay at home if my partner made enough money for our family.	
The men I have admired were laid back and had simple lifestyles.	
Even if I could afford a luxury car, I would prefer a cheaper car.	
People worry too much about showing off their wealth.	
People who define themselves by their job miss out on life.	
*I sometimes pretend I can afford to pay for things that I can't actually afford.	
*I want a high status career.	
*It is embarrassing for a man to have a low paying job.	
*My job or career will be the most important thing in my life.	
*People with important, high-paying jobs deserve respect.	
*When I buy clothes, brand names are important.	
*The most important thing for a father to do is financially support his family.	

### Comments about the Indifference Towards Status Scale:

#### Self-Restraint

*High Score:* Mostly cautious, disciplined, gentle, modest, and values self-restraint; doesn't take excessive risks to prove masculinity

*Low Score:* Thinks risk-taking and living dangerously is important and enjoyable; is daring and defiant

Items	Score
I think taking dangerous risks is stupid.	
I think extreme sports are reckless and pointless.	
I usually avoid doing crazy things with my friends that I might later regret.	
I prefer to stay in rather than go out and do something wild.	
Contact sports like hockey or football are too dangerous.	
I am capable of restraining myself if I have the urge to do something I should not.	



At times I have been criticized by others for not wanting to participate in reckless activities.	
*I sometimes give into peer pressure to do crazy things.	
*I will do things that I know are risky just to prove that I'm not a wimp.	
*I crave sensation seeking activities such as driving at high speeds.	
*It's important to teach boys not to be afraid to take dangerous risks.	
*Most of my friends would describe me as sometimes crazy or wild.	
*I have consumed too much alcohol on several occasions.	
* I like to attend the wildest parties.	

### Comments about the Indifference Scale:

#### Peacefulness

*High Score:* Disapproves of aggression; thinks it is inappropriate and unnecessary

*Low Score:* Thinks men are naturally aggressive and that aggressive and violent behaviours can be justifiable

Items	Score
Pushing people around and acting aggressive is stupid and immature.	
I don't like fighting.	
If someone tried to fight me, I would try to talk them out of it.	
If it looks like a friend of mine is about to fight someone, I will try to prevent it from happening.	
It is always possible to use peaceful ways rather than aggression to deal with provocation.	
Physical aggression among men never solves the problem.	
There is too much violence on television and in the movies.	
*I respect men who get in physical fights with other men when they have been offended.	
*Men who don't defend their honor when they have been insulted by other men are weak.	
*I enjoy movies with a lot of physical fights.	
*I enjoy playing violent video games like Grand Theft Auto.	
*I have gotten into a few physical fights with other guys.	
*Men are naturally aggressive and violent.	
*Some guys deserve a good beating in order to teach them a lesson.	

### Comments about the Peacefulness Scale:

#### Gender Egalitarian

*High Score* = Believes and promotes gender equality and has mutual respect for men and women alike

*Low Score* = Has sexist attitudes towards women; disapproves of feminist agendas

Items	Score
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I consider myself a feminist.	
I think there is still a lot of gender inequality in our society.	
It's unfair when women are paid less than men for identical work.	
If I lived with a romantic partner, I would want to share equally in the housework.	
Women are as effective as men as political leaders.	
Women can be brave and courageous.	
I am uncomfortable when my male friends express sexist opinions.	
*Women complain too much about inequality.	
*There is too much social support for women.	
*Men are typically better leaders than women.	
*Women's primary role should be to stay at home with their children.	
*Feminist groups have caused a lot of problems in society.	
*Large unemployment rates are the result of women in the workforce.	
*I tend to be uncomfortable around women that are more intelligent than me.	

### Comments about the Gender Egalitarian Scale:

#### Attitudes Toward Sex and Intimacy

*High Score:* Believes sex is a special, private, and intimate experience and should be treated with care

*Low Score:* Sex is used as a status symbol; sex is a physical, not an emotional, experience; seen as conquest and competition for popularity

Items	Score
I only have sex with someone if I really care about them	
I usually discuss sex with my partner(s).	
Sex is very private and shouldn't be shared with friends.	
I would avoid rushing my partner into sex if they weren't ready.	
Intimacy in relationships is more important to me than sex.	
Women should be treated with respect, regardless of their sexual reputations.	
I am more interested in long term relationships than casual sex.	
*I feel proud if I find out I've had more sexual partners than my friends.	
*It's natural for men to compete to see who can get the most sexual partners.	
*I am comfortable with having casual sexual partners.	
*I usually brag to my guy friends about any hookups I might have had.	
*I can have sex with someone without getting emotionally attached to them.	
*It's normal for young men to be obsessed with sex.	
*It's normal for men to watch a lot of pornography.	

### Comments about the Attitudes Toward Sex and Intimacy Scale:

### Overall comments about the Alternative Masculinity Measure:

## Appendix D: Original list of items for ALT-M

Items with \* are reverse coded.

## Homophilia

- 1) I would be supportive if a close friend of mine told me he was gay.
- 2) When I hear someone making homophobic comments, I want to tell them to stop.
- 3) I would be comfortable working with a gay man on a project.
- 4) I would be comfortable in a course taught by a gay male teacher.
- 5) \*Gay men should not be allowed to teach young school children.
- 6) \*I sometimes worry whether or not a shirt looks “gay” before I purchase it.
- 7) \*I avoid certain behaviours because they might make me seem gay.
- 8) \*I would never go to events like the Pride parade for fear of being seen by someone I know.
- 9) \*Television shows too many gay couples lately.
- 10) \*I am uncomfortable around gay people.
- 11) \*I would be very disappointed if I had a son who was gay.

## Pro-Femininity

- 1) I can see myself enjoying activities that are seen as feminine, such as yoga or baking.
- 2) I would support a male friend if he wanted to pursue a typically feminine job such as a nurse or kindergarten teacher.
- 3) I believe that all men have a feminine side.
- 4) Its fine for a man to prefer feminine things like knitting to masculine things like cars.
- 5) Fathers are capable of being just as nurturing as mothers.
- 6) Men should express qualities that may be seen as feminine, such as compassion.
- 7) \*I avoid doing things that are considered feminine.
- 8) \*It’s inappropriate for boys to play with Barbie or other girly dolls.
- 9) \*Household chores like laundry and ironing are for women, not men.
- 10) \*Feminine men are weak.
- 11) \*Men who spend a lot of time on their appearance are too feminine.
- 12) \*I admire men who are tough over those who are gentle.

## Freedom of Emotional Expression

- 1) Men should feel comfortable talking to their friends about personal things.
- 2) I’m willing to seek emotional support from others.
- 3) I think it’s good to talk about things that upset you.
- 4) It's fine for children to see their father cry.
- 5) It would be good if men had less aggressive outlets for expressing their emotions.
- 6) \*If a male friend cried in front of me, I would think he was weak.
- 7) \*Men should aim to always be cool and rational.
- 8) \*I think it’s un-masculine when men in positions of power cry in public.
- 9) \*I don’t want people I’m close with to know me when I’m afraid.
- 10) \* Men keep their sad emotions to themselves.
- 11) \* Many modern men are too sensitive.

12) \*People close to me have said that I don't express my feelings enough.

#### Interdependence

- 1) Cooperating with others is an important skill to have.
- 2) It is important to me to show respect to my peers and colleagues.
- 3) My peers and colleagues can count on me when they need help.
- 4) When working on group projects, collaborating is more useful than dominating.
- 5) I care about getting along well with others.
- 6) I respect other peoples' opinions as much as my own.
- 7) \*It's important to me that I am the one who sets rules in my relationships.
- 8) \*Men who spend too much time caring or helping others do not get ahead.
- 9) \*I love to have power over others.
- 10) \*I should be able to get where I want in life on my own.
- 11) \*I get angry when I need to take orders from someone.
- 12) \*I avoid asking people for help when I need it.

#### Indifference Towards Status

- 1) I want a career that will provide a lot of free time for family or personal activities.
- 2) I would be fine to stay at home if my partner made enough money for our family.
- 3) I admire men who have a laidback attitude.
- 4) People worry too much about showing off their wealth.
- 5) People who define themselves by their job miss out on life.
- 6) \*I sometimes pretend I can afford to pay for things that I can't actually afford.
- 7) \*It is embarrassing for a man to have a low paying job.
- 8) \*When I buy clothes, brand names are important to me.
- 9) \* I prefer to hang out with people who have a lot of money.
- 10) \*A man's career defines the kind of person he is.

#### Self-Restraint

- 1) Doing dangerous things that could cause yourself or others harm is stupid.
- 2) I avoid doing crazy things with my friends that I might later regret.
- 3) I prefer to do something quiet at home than go out and do something wild.
- 4) I can stop myself when I have the urge to do something I should not.
- 5) I have been criticized by others for not wanting to participate in reckless activities.
- 6) I consider myself to have more self-control than most guys my age.
- 7) \*I will do things that I know are risky just to prove that I'm not a wimp.
- 8) \*I think it is exciting to do dangerous things, like drive at high speeds.
- 9) \*It's important to teach boys to not be afraid to take risks, even if they're dangerous.
- 10) \*Most of my friends would describe me as crazy or wild.
- 11) \*I like to attend the wildest parties.

#### Diplomacy

- 1) Pushing people around and acting aggressive is immature.
- 2) I don't like getting in physical fights.
- 3) If someone tried to fight me, I would try to avoid it.

- 4) If it looks like a friend of mine is about to fight someone, I will try to prevent it from happening.
- 5) It is possible to use peaceful ways rather than aggression to deal with provocation.
- 6) Physical aggression among men does not solve problems.
- 7) In conflict situations, I am good at solving the problem in peaceful ways.
- 8) \*Men who don't defend themselves when they have been insulted by other men are weak.
- 9) \*I have gotten into a few physical fights with other guys.
- 10) \*Men are naturally aggressive and violent.
- 11) \*Some guys deserve a good beating in order to teach them a lesson.
- 12) \*Sometimes the only way to solve a problem is with your fists.

#### Gender Egalitarian

- 1) I think there is still a lot of gender inequality in our society.
- 2) It's unfair when women are paid less than men for identical work.
- 3) If I lived with a romantic partner, I would share equally in the housework.
- 4) Women are as effective as men as political leaders.
- 5) I would feel uncomfortable if my male friends expressed sexist opinions.
- 6) \*Women complain too much about inequality.
- 7) \*There is too much social support for women.
- 8) \*Women's primary role should be to take care of the home and their children.
- 9) \*Large unemployment rates are the result of women in the workforce.
- 10) \*Women shouldn't be in jobs that require physical strength, such as firefighting or the military.

#### Attitudes Towards Sex and Intimacy

- 1) I only have sex with someone if I really care about them.
- 2) Sex is very private and shouldn't be discussed with friends.
- 3) I would avoid rushing my partner into sex if they weren't ready.
- 4) Emotional intimacy in relationships is more important to me than sex.
- 5) In general, I am more interested in long term relationships than casual sex.
- 6) \* I would feel proud if I had more sexual partners than my friends
- 7) \*It's natural for men to compete to see who can get the most sexual partners.
- 8) \*I am comfortable with having casual sexual partners.
- 9) \*I brag to my guy friends about any hookups I might have had.
- 10) \*I can have sex with someone without getting emotionally attached to them.
- 11) \*I don't need to know someone's name before I have sex with them.

## Appendix E: Ethics Approval



Research Ethics

**Western University Non-Medical Research Ethics Board  
NMREB Delegated Initial Approval Notice**

**Principal Investigator:** Prof. Paul Tremblay  
**Department & Institution:** Social Science/Psychology, Western University

**NMREB File Number:** 108367  
**Study Title:** Alternative Masculinity Measure

**NMREB Initial Approval Date:** September 02, 2016  
**NMREB Expiry Date:** September 02, 2017

**Documents Approved and/or Received for Information:**

Document Name	Comments	Version Date
Recruitment Items	SONA Recruitment	2016/08/24
Letter of Information & Consent		2016/08/24
Other	Debriefing Letter	2016/08/24
Western University Protocol		2016/08/24
Instruments	Demographics questionnaire	2016/08/08
Instruments	HEXACO-60 personality measure	2016/08/08
Instruments	TEIQue SF, emotional intelligence questionnaire	2016/08/08
Instruments	CMNI-46 - Received August 9, 2016	
Instruments	Aggression Questionnaire - Received August 9, 2016	
Instruments	Alternative Masculinity Measure, version 1	2016/08/08

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 0000041.

Ethics Officer, on behalf of Dr. Riley Hinson, NMREB Chair or delegated board member

Ethics Officer: Erika Basile \_\_\_ Nicole Kaniki \_\_\_ Grace Kelly \_\_\_ Katelyn Harris \_\_\_ Vikki Tran  Karen Gopaul \_\_\_

## Appendix F: Items removed during EFA analyses

Scale	Item (number: wording)
Freedom of Emotional Expression	1: Men should feel comfortable talking to their friends about personal things. 5: It would be good if men had less aggressive outlets for expressing their emotions. 7: Men should always aim to be cool and rational. (R)
Interdependence	7: It's important to me that I am the one who sets rules in my relationships. (R) 10: I should be able to get where I want in life on my own. (R) 12: I avoid asking people for help when I need it. (R)
Self-Reliance	4: I can stop myself when I have the urge to do something I should not 5: I have been criticized by others for not wanting to participate in reckless activities 6: I consider myself to have more self-control than most guys my age 9: It's important to teach boys to not be afraid to take risks, even if they're dangerous. (R)
Indifference towards Status	Entire Scale Removed

R = reverse coded

## Appendix G: Items removed during first round of ESEM

<u>Modification</u>	<u>Scale</u>	<u>Item (number: wording)</u>
1	PF	10: Feminine men are weak. (R)
2	PF	9: Men who spend a lot of time on their appearance are too feminine. (R)
3	PF	8: It's inappropriate for boys to play with Barbie or other girly dolls. (R)
4	PF	7: I avoid doing things that are considered feminine. (R)
5	PF	12: I admire men who are tough over those who are gentle. (R)
6	PF	11: Men who spend a lot of time on their appearance are too feminine. (R)
7	D	10: Men are naturally aggressive and violent. (R)
8	GE	3: If I lived with a romantic partner, I would share equally in the housework.
9	D	7: In conflict situations, I am good at solving the problem in peaceful ways.
10	In	9: I love to have power over others. (R)
11	PF	5: Fathers are capable of being just as nurturing as mothers.
12	PF	4: Its fine for a man to prefer feminine things like knitting to masculine things like cars.
13	PF	1: I can see myself enjoying activities that are seen as feminine, such as yoga or baking.
14	PF	2: I would support a male friend if he wanted to pursue a typically feminine job such as a nurse or kindergarten teacher. 3: I believe that all men have a feminine side. 6: Men should express qualities that may be seen as feminine, such as compassion.
15	In	11: I get angry when I need to take orders from someone. (R)
16	In	8: Men who spend too much time caring or helping others do not get ahead. (R)
17	D	1: Pushing people around and acting aggressive is immature.
18	ASI	3: I would avoid rushing my partner into sex if they weren't ready.
19	D	5: It is possible to use peaceful ways rather than aggression to deal with provocation.
20	SR	7: I will do things that I know are risky just to prove that I'm not a wimp. (R)
21	GE	10: Women shouldn't be in jobs that require physical strength, such as firefighting or the military. (R)
22	D	8: Men who don't defend themselves when they have been insulted by other men are weak. (R)
23	FEE	11: Men who spend a lot of time on their appearance are too feminine. (R)



**CURRICULUM VITAE**

**Name:** Jessica Padgett

**Post-secondary Education and Degrees:** University of Waterloo  
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2007 - 2012 B.A.

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**Honours and Awards** Western Graduate Research Scholarship (2015 – 2017)  
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**Publications:**

Chahine, S., Cristancho, S., Padgett, J., & Lingard, L. (2017). How do small groups make decisions? *Perspectives on Medical Education*.  
<http://doi.org/10.1007/s40037-017-0357-x>

Padgett, J. K., & Tremblay, P. F. (in press). Gender differences in aggression. In B. J. Carducci (Editor-in-Chief) & A. Di Fabio, D. H. Saklofske, & C. Stough (Vol. Eds.), *Wiley-Blackwell encyclopedia of personality and individual differences: Vol. III. Personality processes and individual differences*. Hoboken, NJ: John Wiley & Sons.