Virtues, Responsible Actions, and Sexual Well-being:

A Latent Profile Analysis

by

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Abstract

For many, the pursuit of a healthy romantic and sexual relationship is a significant component of their lives. However, the use of satisfaction measures may not be sufficient to capture and understand the underlying factors and nuances that govern sexual well-being. The strong relationality model (Galovan & Schramm, 2018) seeks to use a relational ontology based in connectivity, responsiveness, and virtues to bridge the gaps left in our understanding of couple relationships by the primary usage of individualistic measures of satisfaction. Using the strong relationality perspective, the following two studies endeavour to explore how virtues and responsible actions present in relationships correlate to measures of sexual well-being, including sexual satisfaction, sexual flourishing, and sexual frequency. I hypothesized that higher reported levels of sexual quality measures would be associated to higher levels of reported virtues and responsible actions. I also hypothesized that, in Study 2, partners were more likely to share the same profile group than to be in different profile groups. Latent profile analysis was used to find naturally occurring groups of reported virtue and responsible action use within the study populations (Study 1 single-responder, N =1242; Study 2 partner-responder, N = 615 couples). The three-profile solution found for both studies (Study 1 - *Low* = 400*, Mid* = 747*, High* = 275; Study 2 - *Low* = 508, *Mid* = 587, *High* = 75) had the best model fit for our samples and was then used as a training model to evaluate the sexual quality measures of respondents in those profiles. All sexual quality measures followed the same trend as the virtues and responsible actions with the highest virtue and responsible action scores associated to the highest sexual measure scores in both studies (Study 1 Sex sat. L = 3.534, M = 4.904, H = 5.637; Study 1 Sex flour. L = 3.135, M = 4.181, H = 4.818; Study 2 Sex sat. L = 2.996, M = 3.878, H = 4.440; Study 2 Sex freq. L = 4.649, M = 5.260, H = 5.498). Additionally, results from Study 2 revealed that partners were more likely to have been placed in the same profile. The results of these two studies provided evidence for my

hypotheses and for the use of the strong relationality model in evaluating sexual well-being in relationships. Practical applications for these results could be used in the evaluation and categorization of couples for therapy-based interventions, allocating resources and time to those who find themselves in the lower profiles. Future researchers should endeavour to revalidate the virtue and responsible action measures, asses the relationship between the virtues and "vices," and, finally, how these concepts and measures may differ between contexts, including sexual relationships.

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Virtues, responsible actions, and sexual well-being: A latent profile analysis

Chapter 1: Introduction

A significant component of many people's lives is their desire for a healthy romantic and sexual relationship. Research has demonstrated that how we perceive our sexual and romantic relationships holds connections to not only our ratings of relationship satisfaction and sexual satisfaction (Byers, 2005; Muise, Kim, McNulty, & Impett, 2016) but to psychological well-being (Davison, Bell, LaChina, Holden, & Davis, 2009) and quality of life (Flynn et al., 2016). In general, however, satisfaction measures alone may not adequately capture the underlying factors that influence sexual well-being. For example, several scholars have found via qualitative analysis that sexual satisfaction encompasses multiple perspectives and concepts from connection, trust, fun, and romance to arousal, desire, frequency, and orgasm (Kleinplatz et al., 2009; McClelland, 2014; Pascoal, Narciso, and Pereira, 2014). Fowers et al. (2016) also argue that satisfaction measures generally take a more hedonic view of sexual relationships and assume "that what matters most in a relationship is the gratification of each partner's self-interests" (p. 997-998). Thus, using satisfaction as the sole outcome of interest may mean that sexuality and relationship researchers are focusing on an "overly narrow and perhaps shallow metric" (Fowers et al., 2016, p. 998) and failing to capture a complete view of sexual and relational processes (Fowers et al., 2016; Pascoal et al., 2014).

Although Galovan and Schramm's (2018) Strong Relationality Model of Relationship Flourishing (hereafter referred to as the strong relationality model) does not address sexual relationships directly, its focus on a more holistic or eudaimonic (i.e., flourishing) view of romantic relationships may help to address gaps left by more classical definitions of sexual satisfaction. This model focuses on intentions, behaviours, and couple relationship processes

through a framework influenced by philosophy, virtue ethics, and positive psychology. Relationship flourishing, according to Fowers et al. (2016), contains aspects of meaning personal growth, goal sharing, relational giving the expression of one's "true nature," and a deep engagement with life. Extending this to sexuality research, Leonhardt, Busby, and Carroll (2021; see also Leonhardt Busby, Carroll, Leavitt, & Impett, 2019) have stated that while the development of their sexual flourishing measure (discussed later) is still in its infancy, it looks to evaluate similar aspects of meaning making and relational giving as its relational counterpart in the sexual context. To be clear, strongly relational measures of flourishing that are more so focused on meaning making are not meant to replace more traditional, individualistic measures of sexual satisfaction, which tend to focus more on the evaluation of the sexual act itself. In contrast, researchers may use satisfaction and flourishing in concert to provide a richer and more complete understanding of both romantic and sexual relationship processes.

The Value of a Strong Relationality Perspective

The strong relationality perspective focuses on the idea that a relationship is greater than the individuals within it and takes a relational ontology to better understand relationships, based in connectivity, responsiveness, and virtues. This is, in part, a response to researchers who have argued against the monopoly of an abstractionist or individualist ontology in relationship science (Fowers, Carroll, Leonhardt, & Cokelet, 2020; Fowers & Owenz, 2010; Slife & Richardson, 2008). The strong relationality model also offers the opportunity to pose questions and analyze data through a new lens to expand our understanding of relationship processes, sexual and romantic.

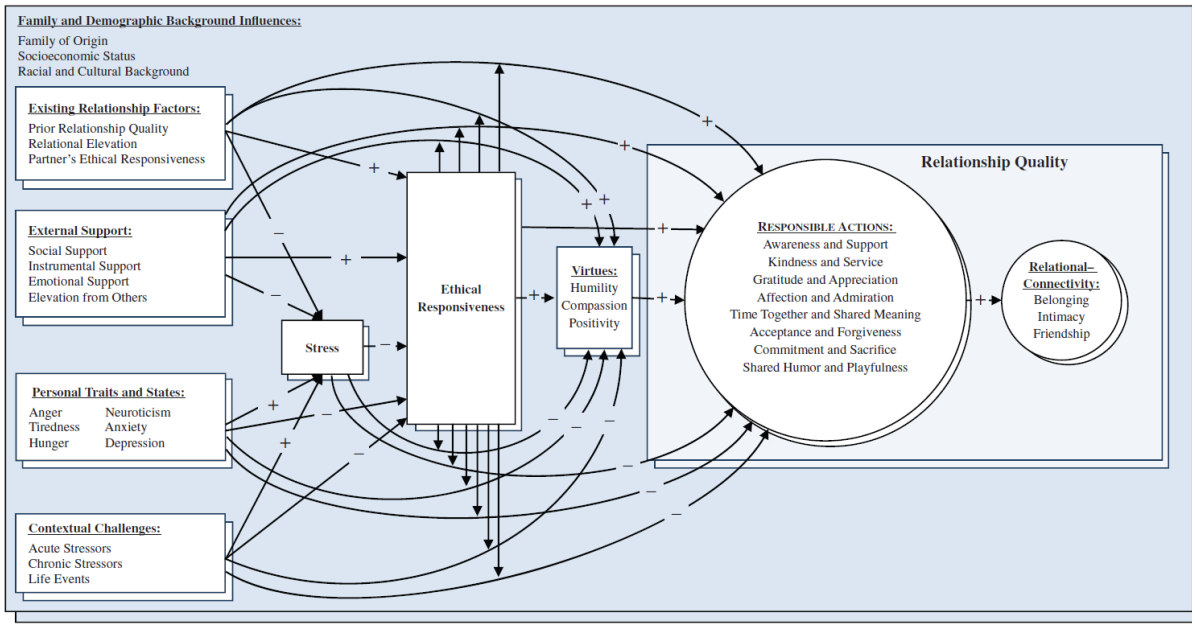

Figure 1. The Strong Relationality Model as presented in Galovan and Schramm (2018).

Grounded in this perspective, Galovan and Schramm's (2018) strong relationality model draws heavily from the philosophies developed by Martin Buber and Emmanuel Levinas in the 20th century. While there are significant differences between the views of these philosophers, both Buber and Levinas propose that our relationships and how we develop within them constitute a large part of what it is to be human.

For both philosophers, the act of engaging with another person requires a response from the actor. If the actor can acknowledge the other before them fully, they may perceive what Levinas (Hutchens, 2004; Levinas, 1961/1969, 1996) entitled the *call of the Other* (Knapp, 2015). Supposing the actor is able to perceive the *call of the Other* and chooses to acknowledge it they are compelled to take responsibility for this person's well-being and must respond to them with intentions and actions that serve the well-being of the Other if they are to interact ethically. Buber (1958) termed this an *I-Thou* way of being. In contrast, should the actor not acknowledge the Other or be unable to perceive the call, they are likely to act in an *I-It* fashion. In an *I-It* state, the actor objectifies the Other, which, according to Buber, is part of day-to-day instrumental interactions and activities but is not ideal for the regulation and health of one's relationships.

Levinas and Buber's insights rely on one's ability to perceive and a willingness to respond to the *call of the Other* (Buber, 1958; Levinas, 1961\1969, 1996), also called *ethical responsiveness* (Galovan & Schramm, 2018). In their view, how we respond to others informs our relationships with them. These relationships then further direct how we understand and react to input, depending on our context, and the development of our *ways of being*.

However, I argue, as others have, that an actor's ability to enact virtues and responsible actions (RAs) is not only governed by their ways of being; it is also governed by practical wisdom. Practical wisdom, or *phronesis*, was proposed by Aristotle (1999) and referred to a person's ability to discern what is required of them and how best to apply one's virtues to achieve their desired goal (Fowers et al., 2020). In other words, practical wisdom allows a person to decide how best to respond to the other through their intentions and their actions. Galovan and Schramm (2018) further argue that our ability and willingness to respond to others from an *I-Thou* state influences us to use virtues in our dealings with them. Practical wisdom also informs us of which virtues to use, and in which amounts to nurture our relationships.

The strong relationality model posits that our response to the ethical call of the Other is what makes us who we are, shapes our internal processes, and eventually our behaviours (Galovan & Schramm, 2018). Sexual relationships within this framework are subject to this call. As one considers their partner's humanness, they may draw on dispositional virtues and practical wisdom, leading to sexually responsible actions, resulting in an individuals' perceptions of sexual satisfaction and sexual flourishing.

Research Aims

Given this, the purpose of this thesis is to explore how the presence and use of virtues in couple relationships relate to individuals' perceptions of sexual satisfaction and sexual

flourishing. Using individual survey data from 1,424 participants and latent profile analysis (Nylund, 2007), in Study 1, I identify latent profiles of virtues and responsible actions and evaluate how these profiles are associated with participants' levels of sexual satisfaction and sexual flourishing. Building on these results, I use a set of binationally representative dyadic data from 615 couples (N = 1,230 individuals) to identify profiles, assess sexual outcomes, and compare them to those found in Study 1. Profiles identified in Study 2 will be further evaluated on their dyadic concordance in profile membership and how this is related to sexual quality.

Chapter 2: Review of Literature

In this chapter, I will explore the foundations of the strong relationality model. These foundations include theory based on the philosophies of Buber, Levinas, virtue ethics, and the model's connections to positive psychology. Eudaimonia, hedonia, virtues, and responsible actions, as well as the connections between them, will be discussed. Sexual satisfaction, as a measure and concept, is examined through empirical study and its association with relationship satisfaction, and sexual flourishing. Person-centered and variable-centered methods and their uses help explain the choice of latent profile analysis for these studies. Finally, I discuss the aims and hypotheses for the current studies.

Insights from Philosophy

Slife and Richardson (2008) argue that much of psychology assumes abstractionism as the default state of reality. This assumption, however, contains what the authors called 'problematic features.' For example, Slife and Richardson state that "this view presumes that the human agent or self is highly individualized, abstracted, and detached observer of the world" (p. 706). In contrast, relationality assumes that a thing cannot be known without knowledge of its context (Slife & Richardson, 2008). For the study of relationships, this implies that a holistic approach is necessary to truly understand the relationship's reality. Slife and Richardson are not alone as proponents of a relational approach. Buber (1958) and Levinas (1961/1969, 1996; Hutchens, 2004) have proposed that the interconnectedness between ourselves and others explains how we develop and maintain who we are, or, rather, our *way of being* in the world. Both Buber and Levinas argued that individuals do not develop in a vacuum but in concert and communication with others. This communication exists as more than the words we say. It includes our actions, our intentions, our perceptions, and who we are, in addition to our words. In this way, our relationships with others, our interconnectedness, develops our identities.

For Levinas, a 20th-century French philosopher, interconnectedness takes the form of responsibility and ethical responsiveness. In his book, *Totality and Infinity* (1961/1969), Levinas outlines what he calls the *face of the Other* as well as the *call of the Other*. When faced with another person, the *face of the Other*, Levinas argues that we are implored to take responsibility for them and to give of ourselves in pursuit of the well-being of the Other, an idea he refers to as the *call of the Other*. The actor then has a choice; they can either ignore the call of the other and *totalize* them, a state where the actor reduces the uniqueness of the individual to a knowable objectification. Or the actor may choose to be ethically responsive, take responsibility for the other, and see them as an entity that is infinitely more complex than a person can know.

Buber, another 20th-century philosopher, has a similar but different approach to interconnectedness. The works of Buber (1958) refer to two states, the *I-It* and the *I-Thou*, between which we are continually moving. He argues that those responding to another in an *I-It* way of being portrays the Other as a single-faceted entity akin to an object. In contrast, those engaging in an *I-Thou* way of being see the Other holistically, as a complex and complete being. Responding in an *I-Thou* fashion requires that one be fully present in the moment, a state that Buber indicates cannot be maintained indefinitely. However, one can endeavor to enter *I-Thou* more frequently, allowing the actor to respond to the Other with increased understanding and compassion while supporting a deeper connection between them. In this case, a person's ethical responsiveness is their ability/effort to see the other as a Thou when in an *I-Thou* way of being.

In addition to the works of Buber and Levinas, virtue ethics also comprises a portion of the philosophical framework undergirding the strong relationality model. Eudaimonist virtue ethics is concerned with developing virtues to encourage eudaimonia or the 'good life' (Hursthouse & Pettigrove, 2018). While there is some disagreement as to what constitutes

'living well' as a human (Hursthouse & Pettigrove, 2018), the strong relationality model considers eudaimonia as a mixture between happiness and meaning, using the eudaimonic term *flourishing* (Baumeister, Vohs, Aaker, & Garbinsky, 2013; Galovan & Schramm, 2018). In this perspective, "Most versions of virtue ethics agree that living a life in accordance with virtue is necessary for *eudaimonia*" (Hursthouse & Pettigrove, 2018, sec. 2.1, para. 4).

Another ingredient of eudaimonia is the use of *phronesis*, or practical wisdom. When one's partner asks them a question, is it better to answer them truthfully or kindly? How does one know the best way to respond if different virtues appear to have competing interests? Practical wisdom is the knowledge or understanding of a situation that allows one to judge which virtue(s) to use and how best to apply them (Hursthouse & Pettigrove, 2018). Aristotle (1999; Fowers et al., 2020), from whom the term originates, wrote that one cannot attain eudaimonia without practical wisdom. It is not enough to act with good intentions if the action is the wrong one. To live well, one must also act well.

Together, Buber (1958), Levinas (1961), and Aristotelian virtue ethics (Hursthouse & Pettigrove, 2018) form the philosophical base of the strong relationality model (Galovan & Schramm, 2018). Thus, in their relationships with each other, humans grow to meet challenges and continuously develop an internal model of themselves, and their ways of being, along the way. From this perspective, our interconnectedness with others allows us to build and maintain relationships that flourish. This can best occur under conditions in which all parties acknowledge each other's infinite complexity and use virtues in a relational dance to strive towards eudaimonia. This effect is not limited to romantic relationships. Sexual relationships constitute a part of this intricate dance and require the same responsibility and acknowledgment to flourish or become *optimal*, in the words of Kleinplatz et al. (2009).

Positive Psychology

In addition to these philosophical foundations, the strong relationality model (Galovan & Schramm, 2018) also draws on ideas from positive psychology. Positive psychology has grown in popularity since its origins in 2000 when Dr. Martin Seligman outlined its focus in a special issue of *American Psychologist*. Seligman and Csikszentmihalyi (2000) argued that despite an express mission to address it, psychology had taken too much of a focus on preventing pathology while leaving the research of human resilience, virtue, and flourishing by the wayside. Therefore, positive psychology was meant "to begin to catalyze a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities" (Seligman & Csikszentmihalyi, 2000, p. 5), or as "the scientific study of ordinary human strengths and virtues." (Sheldon & King, 2001, p. 216). By 2004, the positive psychology movement had amassed enough of a following to starts its own journal, *The Journal of Positive Psychology*.

While its relational focus is distinct from that of positive psychology, in some ways, the strong relationality model can be considered a positive psychology model. Indeed, the current 'virtues' version of the strong relationality model does not overly focus on pathology or negative processes. Instead, as explained previously, the primary factors of interest are virtues and positive relational outcomes. Factors and processes that, according to the above definitions, fall under positive psychology.

In terms of sexuality research, researchers have typically focused on harm reduction or addressing pathology with very little done to truly understand sexuality from a purely positive perspective (Impett, Muise, & Brienes, 2013). This focus persists even though the World Health Organization (WHO; 2010) has noted that "understanding what people find pleasurable is important for understanding sexual behaviour," (p. 4) and that "Sexual health requires a positive and respectful approach to sexuality and sexual relationships," (p. 3). Despite the dearth of positively focused research, some contributions have deepened our

understanding of positive sexuality. For example, when people engage in sexual activities to pursue intimacy or pleasure with their partners, also known as approach motives, they are also more likely to experience increased scores of positive emotions and relationship satisfaction (Impett et al., 2005). These positive approach motives are also linked to the maintenance of sexual desire, as well as connection and growth (Impett, Strachman, Finkel, & Gable, 2008). Positive sexual attitudes, or *erotophilia*, have been linked to approach motives, positive sexual health behaviours (i.e., contraceptive use, gynecological visits), greater sexual openness, and less sexual guilt (Fisher, White, Byrne, & Kelley, 1988; Impett, Muise, & Brienes, 2013).

Despite its utility and rise as an accepted sub-field and the research done using its framework, positive psychology has had its critics and critiques since its inception. Stichter and Saunders (2019), along with a panel of experts in psychology and philosophy, give a current overview of these critiques and, more specifically, those directed at the Values in Action model (VIA; Peterson & Seligman, 2004). Criticisms for the movement included: positive psychology's push for separation from the main field of psychology, a focus on ontological and cultural individualism, issues with the over-representation of Western culture, and the absence of practical wisdom.

Eudaimonia and Hedonia: Satisfaction vs Flourishing

Eudemonia, living well, or flourishing, was proposed by Aristotle (Aristotle, 1999) in his writings on virtues. A life that is worthy of living, according to Aristotle, is one of virtue and meaning beyond hedonia, or pleasure (Hursthouse & Pettigrove, 2018). The work of Baumeister et al. (2013) reflects this position. When Baumeister and colleagues investigated the differences between hedonic measures (i.e., satisfaction, happiness) and eudaimonic measures (i.e., flourishing, meaning), they found important distinctions between the measures despite a high degree of correlation. For example, having enough money to buy the things

one needs was positively correlated to happiness but was not related to meaning. Similarly, reports of health were positively correlated to happiness but not to meaning. At the same time, increased reports of boredom were negatively correlated to both meaning and satisfaction. These findings indicate that while there is merit in understanding how happiness and satisfaction relate to relationships and sexuality, to study only this is to miss important pieces of the picture—the pieces where one ascribes purpose and value, not merely an aggregate or average of positive affect.

Despite the distinctions between the two concepts and their particular importance to a person's life overall, satisfaction measures have eclipsed the field in terms of sexual quality measurement with definitions of sexual satisfaction such as that from Lawrence and Byer (1995) is as "an affective response arising from one's subjective evaluation of the positive and negative dimensions associated with one's sexual relationship" (p. 514). However, Fincham et al. (2007) noted, "When the conversation is dominated by a singular focus, other compelling but more nuanced stories may be missed" (p. 276). Other researchers have also questioned whether we as researchers are missing something in our evaluation of satisfaction (as discussed below). For example, Fowers et al. (2016) state that measures of satisfaction "assume that what matters most in a relationship is the gratification of each partner's self interests" (p. 997-998). Pascoal and colleagues (2014) argue that measures of sexual satisfaction are "not based on theory and [are] without a clear definition of the concept" (p. 23), McClelland (2010) writes that measures of satisfaction suffer from tautological characteristics, are taken for granted, and are considered to be self-evident measures.

This is not to say, however, that satisfaction measures do not overlap with areas of flourishing. When they asked participants to define sexual satisfaction, Pascoal and colleagues (2014) found that when asked, "How would you define sexual satisfaction?" participants listed themes such as desire, pleasure, and orgasm; they also included romance,

mutuality, and expression of feelings. Similar results were found by McClelland (2014) in a study of 40 individuals via a Q-sort analysis. Participants were given 63 cards in random order and were asked to sort them in a quasi-normal distribution according to what was most important for determining their sexual satisfaction, followed by a semi-structured interview. The results of the Q-sort and interviews provided a mixture of self-interested and partner-focused themes.

As discussed previously, in contrast to measures of satisfaction, measures of flourishing are more focused on aspects of personal growth, meaning, and relational giving (Fowers et al., 2016). Leonhardt et al. (2021) found when comparing their measure of sexual flourishing to measures of sexual satisfaction (GMSEX, Global Measure of Sexual Satisfaction, Lawrence & Byers, 1995), sexual communal strength (Muise, Impett, Kogan, & Desmarais, 2012), and orgasm frequency using a confirmatory factor analysis that sexual flourishing and GMSEX were distinct constructs. Further, when used simultaneously to predict orgasm frequency and sexual communal strength—which could be considered an RA—that the GMSEX was more predictive of orgasm frequency and the sexual flourishing measure was more predictive of sexual communal strength. While it seems that flourishing measures can add to our understanding of relationships and sexuality, it is not the purpose of flourishing measures to replace satisfaction measures. Instead, they should be used in conjunction to broaden our focus and allow the meaning and partner-focused themes that may be obscured in current measures to be more explicit to researchers (Busby et al., 2022; Leonhardt et al.,2019).

Sexual Satisfaction

Thus, despite its contributions, the measure of sexual satisfaction has persistent faults discussed by researchers. The first of which is a lack of a clear definition. Schwartz and Young (2009) have said, “because of a presumption that everyone knows what it means . . .

much of the literature on sexual satisfaction and relationship satisfaction never really defines the word" (p. 1). This presumption has led to researchers using vague definitions meant to measure the positive global and subjective thoughts concerning the participants' current sexual relationship (Pascoal et al., 2014; Shaw & Rogge, 2016), if researchers report them at all. Additionally, these definitions and measures have often been constructed without an in-depth consideration of how participants would interpret the term (McClelland, 2014; Pascoal et al., 2014), making them criterion-less and potentially causing a disconnect between participants' answers and the conclusions drawn by researchers. This problem is further complicated by the lack of explicit theoretical frameworks associated with sexual satisfaction. Further, the frameworks that have been used are not particularly diverse, consisting mostly of social exchange perspectives (Byers & Lawrance, 1995; Pascoal et al., 2014). For these and other reasons, McClelland (2010) argued that the field is in need of a more consistent and concrete definition of sexual satisfaction.

The second issue raised by researchers lies in the tools we use to measure sexual satisfaction. For example, Mark et al. (2014) note that the Index of Sexual Satisfaction (ISS; Hudson et al., 1981) did not meet several criteria for a psychometrically sound test, a problematic finding, as it is one of the most frequently used measures of sexual satisfaction. Later Item Response Theory analysis revealed that scales such as the ISS, the Pinney Sexual Satisfaction Inventory (PSSI; Pinney et al., 1987), and the Young Sexual Satisfaction Scale (YSSS; Young et al., 1998) do not provide as much information, nor are they as precise as they could be (Shaw & Rogge, 2016). This imprecision may be partly due to the inclusion of heterogeneous items (i.e., sexual desires, attitudes, communication, physical attraction, hygiene, among others) being collapsed into a single score or to loosely related items that lack conceptual clarity, as mentioned above, being combined into one measure. Thus, by measuring the quality of a sexual relationship in this way, there is a reduced capacity to

detect differences, changes over time, and distinct profiles of responses that may have clinical applications.

Sexual and Romantic Relationships

Consistent with a strong relationality perspective, it has been hypothesized that, in addition to the pleasure it provides, one of the main reasons to participate in sexual activity, apart from procreation, is to satisfy the attachment and communion-related needs of a relationship (Cooper, Barber, Zhaoyang, & Talley, 2011) as well as emotional and spiritual needs (Busby et al., 2022). In their chapter on the positive effects of sex on relationships, Muise et al. (2016) discuss how sexual satisfaction, relationship satisfaction, and general well-being are correlated. For example, a longitudinal sample of 87 participants found that those in long-term relationships who reported higher levels of sexual satisfaction also reported higher levels of relationship satisfaction, with changes in one being closely linked to changes in the other (Byers, 2005). The longitudinal findings of McNulty and colleagues (2015) echo those of Byers with sexual satisfaction in one wave positively predicting marital satisfaction and vise versa. Additionally, whether dating or married, those who report the most sexual satisfaction also report the highest levels of relationship satisfaction (Brezsnyak & Whisman, 2004; Sprecher, 2002).

The stability of romantic relationships can also be affected by sexual factors. For example, Yabiku and Gager (2009) found that sexual frequency was inversely associated to relationship dissolution in both cohabitating and married couples. Couples also report that sexual incompatibility and sexual dissatisfaction are among the main reasons they broke up (Kurdek, 1991; Sprecher, 1994). Conversely, the adverse effects of anxious attachment, avoidant attachment, and neuroticism on relationships have been shown to decrease for those who are engaging in more frequent sex (Little, McNulty, & Russel, 2010; Russel & McNulty, 2011). In their study of sexual communal strength, the motivation to enhance a partner's

well-being without an expectation of direct reciprocation (Mills, Clarks, Ford, Johnson, 2004), Muise, Impett, Kogan, and Desmarais (2013) found that participants whose partners were high in communal motivations experienced increased sexual desire, felt more satisfied, and felt more committed to their relationships.

Thus, our sexual relationships are an essential part of our romantic relationships, with thoughts of one influencing our feelings about the other. It is because of interactions like those listed above, that work to understand one must also include the other. If virtue theory is to help us understand romantic relationships, it must also help us to understand sexual ones.

Virtues and Responsible Actions

Within the framework of strong relationality, an actor's propensity to respond to the *call of the Other* (i.e., their ethical responsiveness) predicts their use of virtues and responsible actions in their relationship. According to Snow (2019), there are multiple ideas about what defines virtue and which traits to include. In this study, I will be using the definition proposed by Fowers et al. (2020) that defines virtues as a "stable, well-motivated disposition in self- and other-benefitting ways based on knowledge about those actions." (p. 1). In other words, virtues are learned models of habitual thoughts that result in actions done for the benefit of themselves or others. Galovan and Schramm (2018) provide evidence for using three primary virtues within the strong relationality model: humility, compassion, and positivity. Carrol et al. (2006) and Fowers & Owens, 2010) have provided further evidence for other-centeredness and forgiveness, respectively.

Foundational to these virtues, as described above, is the concept of *phronesis* or practical wisdom. Composed of an actor's knowledge of situational cues and an understanding of which virtue to use when, practical wisdom is an actor's acquired ability to act well in whatever situation (Fowers et al., 2020). Said another way, practical wisdom allows an actor to discern which virtue is appropriate to use, when to use it, and how to gain

the best outcome, especially for the other. Practical wisdom is a common feature of most versions of virtue ethics (Hursthouse & Pettigrove, 2018). However, there are conceptualizations that either do not include it or do not place it as a 'meta-virtue,' notably Seligman's virtues and character strengths (Stichter & Saunders, 2019). Regarding relationships, practical wisdom may explain when it may be better, for example, to use honesty over kindness.

The strong relationality model also discusses responsible actions (RAs), which are actions that contribute to connection in couples (Galovan & Schramm, 2018). These responsible actions are the actions taken by the actor in service to the Other and are backed by virtuous intent. In other words, responsible actions are the actor's tangible response to the call of the Other, similar to the responsibility Levinas describes. The authors liken responsible actions to Clark and Aragon's (2013) communal strength in that these actions are taken intentionally to help their partner achieve their ideal self. Galovan and Schramm (2018) identified eight responsible actions from the literature, which include: kindness and service, gratitude and appreciation, affection and admiration, time spent together and shared meaning, awareness and support, forgiveness and acceptance, shared humor and playfulness, and commitment and sacrifice. The authors also list eight potentially destructive, non-responsive actions that include hostility, coldness, resentment, and criticism, among others. These harmful actions will not be explored here for two reasons: (1) because the strong relationality model looks to evaluate the and understand relationships from a strengths-based perspective, and (2) because these vices require an in-depth analysis of their own to understand the nuance and complexity of how they interact not only with sexual quality but with the virtues and responsible actions as well.

There has been some debate about which traits should be considered virtues and if virtues can be universally applied across cultures. For example, Dahlsgaard, Peterson, and

Seligman (2005) compiled information from multiple texts across various cultures and concluded that there are a set of six universal virtues that can be found across the world. However, not all researchers have been convinced of their findings. Snow (2019) points out that certain important texts were not included in the analysis, that some virtues that were equated with one another were only roughly similar in description, and that a disproportionate amount of information came from Western culture. Snow argues that these oversights invalidate claims of a universal virtue proposed in this system. Galovan and Schramm (2018) do not claim that the strong relationality model is universally appropriate or that the virtues used within it reflect an exhaustive listing of virtues. However, Western scientists created the model by studying Western populations, and the included virtues and their definitions will likely be familiar to most participants.

Despite questions of its universality, researchers have studied how virtues—and what the strong relationality model calls responsible actions—influence sexual relationships. For example, Horan (2016) found in a post-hoc analysis of 183 university students that participants who omitted their previous sexual partners from discussions with their current partner were also more uncomfortable with other forms of safer sex communication than peers who did not make omissions. Further, of the students surveyed, around 60% of them had been deceptive about their number of past partners at least once, while another 20.1% were routinely deceptive. When evaluated from a strong relationality perspective, partners who deceive their partners, either through omission or lying, are not approaching the relationship in an *I-Thou* manner. This deception, as Horan discusses, may compromise the relational qualities that would otherwise be enhanced through sex and affection. This lack of honesty also places both partners at an increased risk of contracting an STI.

Similar to Galovan and Schramm's (2018) responsible actions, Young and Curran (2016) evaluated the effects of intimate sacrifices and partner appreciation in a sample of

university students. Intimate sacrifices were defined as activities—such as cuddling, massages, or having sex—that an actor does or a benefit that they give in order to promote their relationship's well-being. The authors found that in cases where intimate sacrifices were high and appreciation was low, the sacrificing individual experienced lower relationship satisfaction. In contrast, if a partner's appreciation was high, there was no significant relationship between sacrifice frequency and relationship satisfaction. Young and Curran's study is an example of how the bidirectionality of responsible actions can affect relationship processes. It seems that both partners must be engaged in responsible actions, such as sacrifice and appreciation, to avoid negative consequences to relationship processes, both romantic and sexual.

Sexual communal strength has also been shown to affect a person's evaluation of their sexual relationship significantly. Sexual communal strength, derived from communal strength research (Mills, Clark, Ford, & Johnson, 2004), refers to when one partner provides for another's sexual needs without the expectation of direct reciprocation (Muise & Impett, 2015), which could be classified as a responsible action under the strong relationality model. In a study of 118 couples, Muise and Impett (2015) found that those who scored higher in sexual communal strength tend to have partners who express more commitment and happiness in their relationship at two time points, with part of this effect being accounted for by individual relationship quality. In a second study, Muise and Impett (2015) found evidence that an actor's sexual communal strength predicted their partner's relationship quality over and above the partner's own report of relationship quality. Through the lens of strong relationality, partners who are focused on mutualistic relationship intentions and behaviours are more likely to be in an *I-Thou* state leading to improved relationship quality, which is reflected in the results of Muise and Impett.

The above research provides initial evidence for the role of virtues and responsible actions in sexual relationships. Though more needs to be done to identify and understand the role of virtues and RAs in the context of sexual relationships, this study strives to add to the current literature by using a person-centred approach to identify profiles of virtues and responsible actions and assess how those profiles are associated with outcomes of sexual satisfaction and flourishing.

Latent Profile Analysis: Person-centred vs Variable-centred Approaches

Much of the literature for both romantic and sexual relationships rely on variable-centered methods. These approaches rely methodologically on "measuring the relevant variables and studying their relations across time," with an understanding that the relationships between variables are of developmental importance (Bergman & Trost, 2006, p. 604). Though there is much to be gained from this type of inquiry, there are also distinct issues with the approach, especially when considering complex, dynamic, and non-linear processes.

These problems can be explained with ergodic theory. According to Molenaar and Campbell (2009), ergodic theory is essential when considering under what conditions interindividual variation—variation pooled across subjects (variable-centred approaches)—will provide the same results as an intraindividual variation (via person-centred approaches). Intraindividual variation focuses on the variation of a single subject across multiple time points (P-technique) or on the aggregation of cross-sectional responses of multiple constructs to create heterogeneous subgroupings of individuals. In contrast, interindividual variation is focused on the aggregation of subjects' variables across one or more time points (R-technique) and is focused on homogeneity and the central tendencies within the population. The differences between these two levels of variation are further illustrated by Cattel (1952) using what is called the Cattel data box.

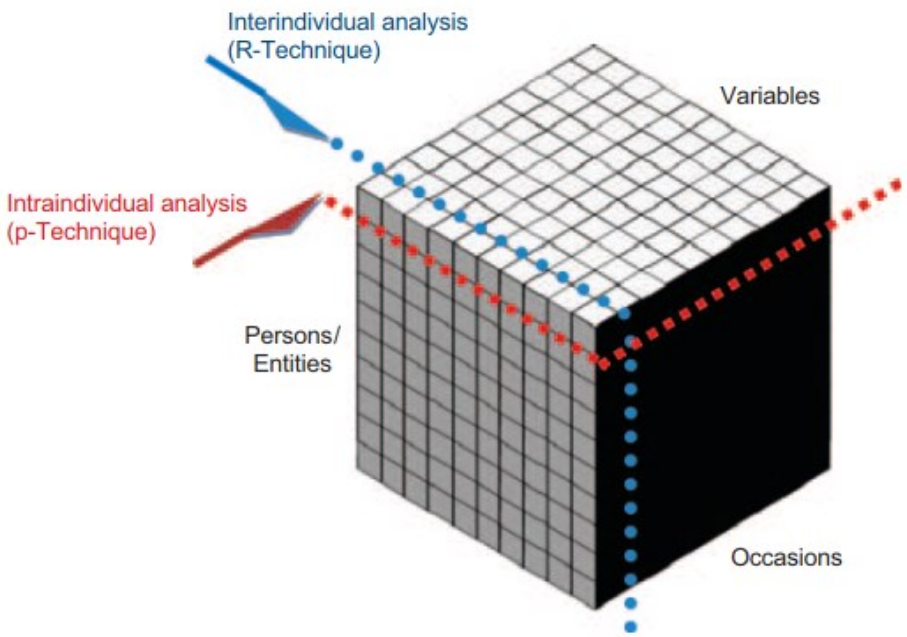

Figure 2. Image of a Cattel Box taken from Molenaar and Campbell (2009) depicting the intersections and differences between Person-centered and Variable-centered approaches.

For a person-centered and a variable-centered analysis to be comparable, two conditions must be met: homogeneity and stationarity. To preserve homogeneity, the number of factors and the factor loadings cannot vary across participants (Molenaar & Campbell, 2009). Stationarity indicates that a psychological process remains statistically stable across time or participants. Stationarity is a complicated condition to maintain as many psychological processes and developments are inherently non-stationary, such as learning, habituation, and sensitization. If these conditions cannot be maintained, then variable- and person-oriented techniques cannot be used interchangeably. Therefore, choosing the level of analysis for the question at hand and later application is of particular importance. According to Molenaar and Campbell (2009), psychological and other individual processes occur at the level of the individual, and if these processes violate ergodicity, then the analysis should be intraindividual. Importantly, romantic and sexual relationships may be considered as intraindividual processes. These processes, experienced by more than just the individual, involve the complex within-person psychological processes listed above (i.e., learning,

habituation). Additionally, the factors being explored by the researchers may not affect each person or couple to the same degree, violating homogeneity.

While not universally used, latent profile analysis, an intraindividual analysis technique, has already been used to evaluate relationship processes, including studies on sexuality and relationships. For example, Rodrigue et al. (2015) used latent profile analysis to understand casual sexual relationships. They found evidence for five different groups, from one-time sexual encounters to friendships that added a sexual component later. Toth-Kiraly et al. (2019) used latent profile analysis to identify four groups of sexual motivation: highly self-determined, moderately self-determined, moderately self- non-determined, and highly self- non-determined. Those with highly self-determined profiles also reported the highest levels of harmonious sexual passion, observed sexual passion, and positive emotions during sex. Those in a highly self- non-determined group showed an inverse relationship with the same measures. The moderate groups fell somewhere in-between. Lastly, Kimmes et al. (2017) used latent profile analysis to understand how mindfulness affected the attribution of relationship transgressions. The authors found evidence for four groups: high mindfulness, non-judgmentally aware, low mindfulness, and judgmentally observant. The first two groups were associated with benign attributions of transgressions, while, in contrast, those of the fourth group were associated with increased scores of anxious and avoidant attachment.

Conceptually person-centered approaches holistically consider all components and guiding principles over the course of a developmental time scale or consider cross-sectional heterogeneity in response patterns to identify distinct subgroups; methodologically, it is focused on the identification of subsystem(s) not identified in the current research that focuses solely on central tendency (Bergman & Trost, 2006). In practice, latent profile analyses allow researchers to evaluate complex systems of interactions and compare these

profiles to outcomes of interest. This technique is especially useful for understanding sexual relationships, as their dynamic nature likely violates stationarity assumptions.

The Current Study

Evidence from both philosophy and empirical studies suggests a significant relationship between a person's sexual relationship and the use of virtues and responsible action by their partner and themselves. These two subsequent studies intend to identify profiles of virtues and responsible actions and analyze any patterns that arise when compared to measures of sexual satisfaction and sexual flourishing. Further, in the second study, I intend to use dyadic data to compare profiles between partners and evaluate where similarities and differences lie in their profiles and what patterns emerge in their sexual quality. In the first study, I hypothesize that profiles showing increased virtues and responsible actions will be related to increased sexual satisfaction and sexual flourishing outcomes. In the second study, I hypothesize that profiles showing high levels of virtues and responsible actions (RAs) will be related to sexual satisfaction, similarly to Study 1. Looking at the dyadic data, I also hypothesize that there will be a higher proportion of couples whose members fall within the same class as opposed to couples made up of disparate profiles and that partner's profiles will interact to predict sexual quality.

Chapter 3: Methods

Study 1

Sample

Participants for this study were recruited from the United States and Canada via Amazon Mechanical Turk. Participants received $1.25 to $1.50 USD. This survey's inclusion criteria included: currently being in a romantic relationship for at least the past 3 years and being over 18 years of age. Data was collected from 1,516 individuals (Canada *n* = 182, 12.8%; USA *n* = 1242, 87.2%), with female participants accounting for just over half of the sample (56.1%, male=43.9%; participants responded to the question, "What is your gender?" by indicating either *Male* or *Female*). The participants' age ranged from 18 to 73 years (*M* = 35.99, *SD* = 10.45), and the length of the relationship ranged from 36 to 624 months (*M* = 109.15, *SD* = 97.73). First-time marriage contributes most to marital status at 48.3%, followed by 31.6% cohabiting, 11.2% living apart, 6.4% remarried, 1.5% divorced, and 0.2% widowed. 28.4% of participants identified as an ethnic minority, while 11.7% identified as homosexual and an additional 8.6% identified as bisexual. 58.0% of participants reported children in the home. Household income was quite diverse, with the majority of participants reporting between *$80,000-$99,999* and *$100,000-$120,000* gross income per year (*M* = 5.4, scores ranged from *$0* to over *$300,000*). The questionnaire included attention check questions and speed filters to preserve the quality of the data collected. Participants who answered more than two attention check questions incorrectly were removed. The total sample included 1,424 individuals after data cleaning.

Table 1.
Study 1 – Demographic data.

		n	%	Min.	Max.	*M*	*St. Dev.*
Country							
	Canada	184	12.80				
	U.S.	1248	87.20				

Age				18	73	35.96	10.45
Gender							
	Male	627	43.90				
	Female	801	56.10				
Sexual orientation							
	Completely homosexual	145	10.10				
	Mostly homosexual	22	1.50				
	Bisexual	125	8.70				
	Mostly heterosexual	126	8.80				
	Completely heterosexual	1014	70.8				
Relationship orientation							
	Male, same-sex	69	4.80				
	Female, same-sex	78	5.50				
	Male, mixed-sex	556	39.10				
	Female, mixed-sex	720	50.60				
Relationship length (years)				3	52	9.08	8.132
Marital Status							
	Living apart together	161	11.30				
	Cohabitating	452	31.60				
	First marriage	692	48.40				
	Separated	10	0.70				
	Divorced	22	1.50				
	Remarried	91	6.40				
	Widowed	3	0.20				
Presence of children							
	Yes	829	57.90				
	No	602	42.10				
Ethnicity (%)							
	White	1021	71.30				
	African American /Black Canadian	143	10.00				
	Hispanic/Latino	88	6.10				
	Alaskan Indian/Alaskan Native	11	0.80				
	Indigenous/Aboriginal	1	0.10				
	Arabic	4	0.30				
	Chinese	35	2.40				
	Filipino	12	0.80				
	Japanese	5	0.30				
	Korean	8	0.60				
	South Asian	24	1.70				
	Southeast Asian	9	0.60				
	West Asian	2	0.10				
	Other	14	1.00				
	Mixed Heritage	55	3.80				
Education							
	Less than high school	9	0.60				
	High school graduate	110	7.70				
	Some college	280	19.60				
	2-year degree	213	14.90				
	4-year degree	599	41.80				
	Master's	185	12.90				
	Doctorate	36	2.50				
Household income, yearly gross (USD)*							
	None	8	0.60				

Less than 20,000	66	4.60
20,000-39,999	208	14.50
40,000-59,999	245	17.10
60,000-79,999	281	19.60
80,000-99,999	234	16.30
100,000-119,999	140	9.80
120,000-139,999	67	4.70
140,000-159,999	54	3.80
160,000-199,999	71	5.00
200,000-299,999	40	2.80
More than 300,000	18	1.30

Note. *USD = US dollars.

Measures

Sexual Well-being.

Sexual Satisfaction. Sexual satisfaction was measured using a 6-item, 6-point modified version of the Quality Sex Index (QSI; Shaw & Rogge, 2016). Participants were asked to rate how true they believe the provided statements to be, *Not at all true* = 1 to *Completely true* = 6. Examples of statements include, "My sex life is fulfilling," and "I am happy with my partner as a lover," with higher ratings indicating that the statement was truer for the participant. (α =.974).

Sexual Flourishing. Sexual flourishing was measured using a 6-item, 5-point Likert scale (Leonhardt et al., 2019). Participants were asked to rate how often they felt the statement was a part of their sexual relationship with their partner, *Never or almost never* = 1 to *Always or almost always* = 5. Examples of these statements include, "We do things in our sexual relationship that are deeply meaningful to us as a couple." and "Our sexual relationship includes deep mutual respect and admiration." Statements evaluated feelings of belonging, meaning, and engagement related to one's sex life. Higher ratings indicate increased levels of sexual flourishing due to these feelings. (α=.947).

Virtues.

Humility. Humility was assessed using a 22-item Likert scale constructed from items taken from Bell and Fincham (2017), Davis et al. (2011), and Landrum (2011). Respondents

were asked to rate their interactions with others on a 7-point scale, *Disagree strongly* = 1 to *Strongly agree* = 7, with higher numbers indicating increased humility. Examples of these items include, "I am willing to admit when I have made a mistake," and "I am willing to take others' advice and suggestions when given." Increased ratings indicate more humility except for 9 reverse-coded items. (α=.737).

Using Item Response Theory (IRT), item characteristic curves, and item factor scores it was apparent that Humility was best split into three sub-scales. Explicit humility (Hex), implicit humility (Him), and pride (Hpr). Hex became a 6-item 7-point Likert scale (α = .894), Him a 7-item 7-point scale (α = 869), and Hpr a 9-item 7-point scale (α = .901).

Compassion. Compassion was evaluated using a 4-item, 7-point modified version of Pommier (2011; α=.917). Participants self-rated the frequency for which they felt compassion for others from *Never* = 1 to *Always* = 7, with higher ratings indicating a greater frequency of compassionate feelings. Examples of these statements include, "When I see someone feeling down, I want to offer support," and "I like to be there for others in times of difficulty."

Positivity. Using a modified version of the Life Orientation Test (Scheier et al., 1994; α=.873), participants were asked to self-rate their agreement with positivity statements on a 4-item 7-point Likert scale. Agreement with these statements was rated *Strongly disagree* = 1 to *Strongly agree* = 7 on items such as "In uncertain times, I usually expect the best," and "I see a lot of good in people." Higher ratings indicated more agreement with positive statements.

Responsible Actions (RAs). Responsible actions include kindness, gratitude, affection, time spent together, intimate disclosure, humor, awareness and support, and sacrifice.

Kindness, Gratitude, Affection, and Time Spent Together.

Kindness. A 4-item, 7-point Likert scale was used to evaluate the participant's agreement with kindness statements concerning their relationship. Participants were asked to rate their agreement from *Strongly disagree* = 1 to *Strongly agree* = 7 on items such as "I feel like my spouse looks for and enjoys doing things for me in our marriage.," and "We regularly do random acts of kindness for each other." Higher ratings indicated increased agreement with relationship-related kindness (α=.901).

Gratitude. Gratitude was measured using a 5-item, 7-point Likert scale. Participants were asked to rate their agreement with statements about gratitude in their relationship, *Strongly disagree* = 1 to *Strongly agree* = 7. Examples of these statements include, "My partner regularly expresses his/her gratitude to me in many ways," and "When I do something nice for my spouse, he/she expresses thanks," with higher ratings indicating more agreement (α=.916).

Affection. Affection was evaluated using a 6-item, 7-point Likert scale. Participants were asked to rate their agreement with affection statements, *Strongly disagree* = 1 to *Strongly agree* = 7. These statements included, "I will often find some way to tell my partner, 'I love you,'" and "My spouse shows love for me in many ways." Higher ratings are indicative of increased agreement (α=.920).

Time spent together. Time spent together was measured using a 4-item, 7-point Likert scale. Participants were asked to report their agreement with the provided statements from *Strongly disagree* = 1 to *Strongly agree* = 7. Examples of these statements include, "We do activities together that we both enjoy," and "We make regular time to just be together and focus on each other." Higher ratings indicate more agreement except in the case of the single reverse coded item (α=.844).

KGAT. IRT, item characteristic curves, and factor analysis were used with results indicating that. Kindness, Gratitude, Affection, and Time Spent Together were too highly

correlated to be treated as separate scales. The scales were merged into an 18-item 7-point scale (4 kindness items, 5 gratitude items, 5 affection items, and 4 time spent together items) (α = .940).

Intimate Disclosure. Intimate disclosure was evaluated using a 6-item modified version of the NRI Intimate Disclosure Subscale (Buhrmester & Furman, 2008) and a single item from the Dimensions of Commitment Inventory (Adams & Jones, 1997). Participants were asked to rate their agreement with disclosure related statements, *Strongly disagree* = 1 to *Strongly agree* = 7, on items such as, "I tell my partner things that I don't want others to know," and "I trust my partner to keep personal things I share with him/her private." Higher ratings indicate increased levels of agreement. (α=.918).

Humor. Humor was measured using the Positive Subscale of the Relational Humor Inventory (De Koning & Weiss, 2002), an 8-item, 7-point Likert scale. Participants were asked to rate their agreement, *Strongly disagree* = 1 to *Strongly agree* = 7, on statements such as, "My use of humor has brought me closer to my partner," and "As a couple, we have our own sense of humor." Higher ratings indicate increased levels of agreement apart from a single reverse coded item. (α=.906).

Awareness and Support. Support and awareness in the relationship were evaluated using a modified 12-item, 7-point scale using novel items as well as items from The Marriage Clinic (Gottmen, 1999) and Bodenmann's (2008) Dyadic Coping Inventory. Participants rated their agreement, *Strongly disagree* = 1 to *Strongly agree* = 7, with statements such as, "I can tell you what stresses my partner is currently facing," and "When I am stressed, my partner takes on things that I normally do in order to help me out." Higher ratings indicate increased agreement with item statements. (α=.945).

Sacrifice. Sacrifice was evaluated using a 4-item, 7-point modified version of the Dimensions of Commitment Inventory (Adams & Jones, 1997). Participants were asked to

rate their agreement, *Strongly disagree* = 1 to *Strongly agree* = 7, with provided statements including, "When push comes to shove, my relationship with my partner comes first," and "It can be personally fulfilling to give up something for my partner." Higher ratings indicate increased agreement with the sacrifice items. ($\alpha = .901$).

Analytic Plan

For these analyses I used a latent profile analysis (LPA; Nylund, 2007), an example of finite mixture modelling (Dyer & Day, 2015), that finds groupings that occur naturally within a sample, *latent classes* or *profiles*, similarly to a cluster analysis. LPAs are classified as an exploratory technique as the number of profiles and outcomes within them are not know to the researcher before hand, nor can they be specified (Nylund, Asparouhov, & Muthén, 2007). Profiles are found through an iterative process in which the researcher first estimates the model with one class or profile, then estimates it again adding a second profile. This process is repeated until both interpretation and fit statistics suggest that a model has been found that best represents the profiles in the provided data. Though the fit statistics may support a larger number of classes, it is important to inspect the profiles size as too few participants may indicate a small subset of an already identified class (Dyer & Day, 2015). In addition to finding naturally occurring groups within a sample, LPAs are useful for between-profile comparisons and accounting for the uncertainty of classification. To accomplish this, profiles are treated as latent variables and when combined with weighed multi-group analysis can assign a participant partial membership to multiple profiles when required using the BCH procedure (Asparouhov & Muthén, 2015). To evaluate between-profile differences a Wald statistic was used. First, an omnibus test of all profiles was performed with a significant result indicating a difference amongst the groups. Variables with a significant omnibus Wald value were then tested in individual profile comparisons to establish which combination of profiles significantly differed. Once the latent profile analysis is constructed, class probabilities, the percentage of each

participants membership in each group, can be used to evaluate how other variables, such as those of sexual well-being, behave within those groups.

Before the latent profile analysis, I evaluated the measures' psychometric properties using Item Response Theory (IRT) and the alignment method. Initially, an IRT analysis was used to decrease the noise produced in the variables of interest. Latent variables for each scale were estimated with indicators specified as ordered categorical variables in Mplus, as doing so yields item thresholds for transition points between response options and allows for the estimation of item characteristic curves (ICCs). Item characteristic curves were used to identify the number of distinguishable response options for each item in a scale. Items that were not distinguishable from one another were recoded to the same response. When response options were reduced for a given item, for ease of interpretation responses were rescaled to the same metric as the original scale. If an item showed too little contribution of information, as per the item characteristic curves, it was removed from the scale. When the ICCs suggested multiple rescaling options, fit statistics (log-likelihood, AIC, BIC) were compared to identify which option best fit the data. Kindness, Gratitude, Affection, and Time Spent Together scales were found to be too highly correlated to exist as individual measures (rs > .673) and were combined into one measure, hereafter referred to as KGAT. Conversely, Humility was split into three separate measures according to measure factor analysis: Explicit humility (Hex), implicit humility (Him), and pride (Hpr) (details discussed above). After IRT, each scale was aligned by gender and by relationship composition (i.e., same-sex male, same-sex female, mixed-sex male, and mixed-sex female) and the mean factor scores of each scale taken for further analysis.

Because participants may not interpret measures in the same way across profiles, methodologists have recommended establishing invariance, configural (consistent item on construct loading), metric (consistent item factor loadings), and scalar (consistent item

intercepts), before mean comparisons can be made (Little, 2013). However, one can eliminate the need for measurement invariance through multi-group alignment, as proposed by Asparouhov and Muthén (2014). This process estimates an overall configural model for the chosen groups then fits an optimally rotated solution to minimize differences between groups in factor scores and intercepts. According to simulations, the alignment method can produce reliable mean estimates with non-invariance in up to 25% of measurement parameters (Asparouhov Muthén, 2014). For this analysis factor scores were aligned by participant gender (male or female) and by relationship orientation (same-sex male, same-sex female, mixed-sex male, and mixed sex-female). These aligned factor scores were then rescaled to the original metric of the measure and used throughout the analysis (see Galovan et al., 2021).

Once the preliminary analyses were established, the aligned mean factor scores and variances of the virtues and RAs were used to establish the profiles (Figure 2). Once the number and composition of the profiles was confirmed the class probabilities of those profiles were used in a training model to evaluate how participants in each profile rated their sexual quality. Control variables were included in the training analysis to account for their effect on differences in sexual quality as well as potential demographic differences across profiles. Finally, mean factor scores of the virtues, RAs, and sexual quality variables were compared across groups. Analyses were conducted using Mplus version 8.5 (Muthén & Muthén, 1998-2011).

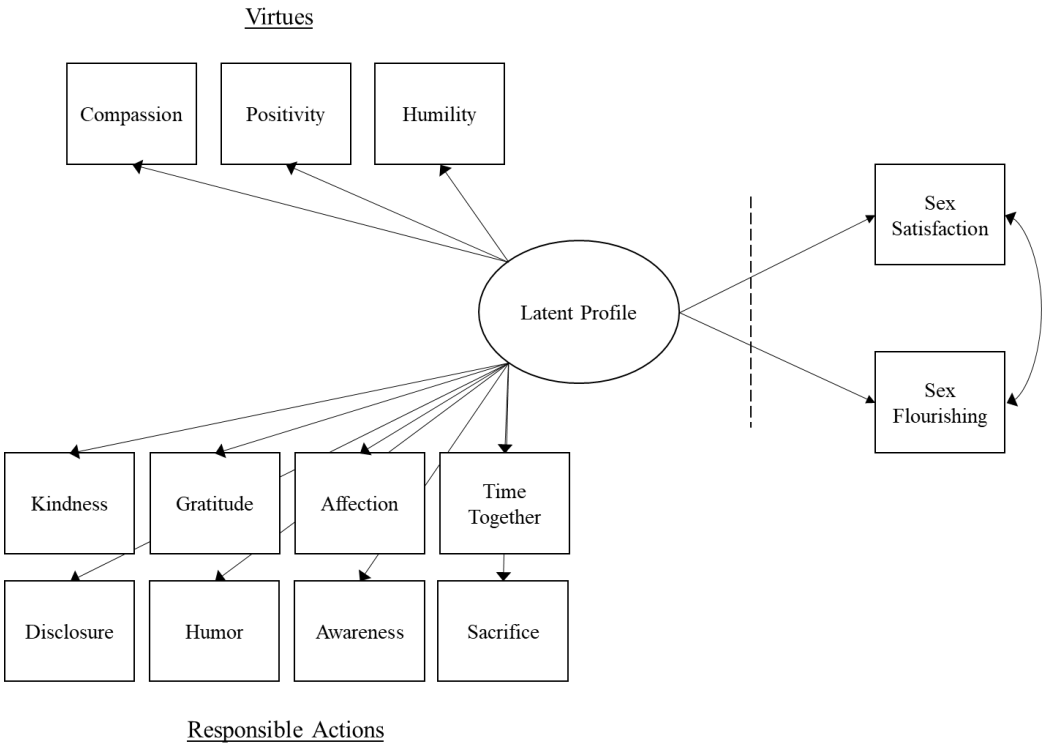

Figure 3. Study 1, latent profile model.

Study 2

Sample

The 615 participant couples (*N* = 1,230) in Study 2 consisted of Americans and Canadians recruited through a research firm from the US specializing in data collection (Qualtrics). This sample is quota-based, which was drawn by the age of the participants and their declared race/ethnicity, and were weighted to be nationally representative in age, race/ethnicity, education, income, region, and religious affiliation according to country. Participants were asked to indicate if they were currently in a romantic relationship at the beginning of the survey and were asked not to discuss their answers with their partner until they had completed the online survey. Participants in the study were compensated via gift cards, points for goods and services, or in cash (between $5 and $10 USD).

Just under half of the sample participants were male (48.2%; participants responded to the question, “What is your gender?” by indicating either *Male* or *Female*) with a mean age of 45.51 years old (*Range*= 18-89; *SD*= 16.79). 25.4% of the sample described themselves as

a minority, and 16.6% as being in a same-sex relationship. Education of participants included incomplete high school (3.3%), high school (21.0%), some college (20.0%), an associates/technical/trade degree (15.4%), a bachelor's or equivalent degree (26.1%), and a graduate or professional degree (14.1%). All participants reported being in a romantic relationship, with the mean length of the relationship reported as 18.52 years (*Range*= 0-66; *SD*= 15.35). Of these relationships, 80.8% were married and, of those, 15.2% were remarriages. Children were present in 70.2% of households. Annual gross income per household varied significantly, with a mean $76,488.60 and a standard deviation of $71,350.96 (*Range*= 0-1,000,000; *MDN*= $64,000.00).

Table 2.
Study 2 – Demographic data

	n	%	Min.	Max.	*M*	*St. Dev.*
Country						
Canada	616	50.10				
U.S.	614	49.90				
Age			18	89	45.49	16.94
Gender						
Male	591	48.00				
Female	639	52.00				
Sexual Orientation						
Homosexual	201	16.30				
Heterosexual	1029	83.70				
Relationship Orientation						
Male, same-sex	76	6.20				
Female, same-sex	124	10.10				
Male, mixed-sex	515	41.80				
Female, mixed-sex	515	41.80				
Relationship length (years)			0.25	66	18.51	15.23
Lived together before marriage						
Yes	601	48.90				
No	449	36.50				
Not married, living together	144	11.70				
Not married, not living together	36	2.90				
Marital status						
Yes, married	995	81.10				
No, not married	233	18.90				
Remarried						
Yes	183	14.90				
No	905	73.60				
Children, from this or previous relationships						
Yes	880	71.50				
No	348	28.30				
Ethnicity						

White	937	76.60
African American/ Black	85	7.00
Canadian		
Hispanic/ Latino	100	8.20
Asian	66	5.40
Arabic	1	0.10
Aboriginal/ Indigenous/ Native Alaskan	7	0.60
Native Hawaiian/ Pacific Islander	1	0.10
Mixed heritage	25	2.10
Education		
Did not complete High School	72	5.90
High School Graduate	280	22.80
Some College	231	18.70
2-year Degree	184	15.00
4-year Degree	311	25.30
Graduate or Professional Degree	152	12.30
Income, yearly gross household (USD)*		
None to 19,999	155	12.70
20,000 to 39,999	282	23.10
40,000 to 59,999	224	18.40
60,000 to 79,999	204	16.70
80,000 to 99,999	105	8.60
100,000 to 119,999	107	8.80
120,000 to 139,999	83	6.80
140,000 to 159,999	24	2.00
160,000 to 179,999	8	0.60
180,000 to 199,999	10	0.80
200,000 or more	18	1.50

Note. *USD = US dollars.

Measures

Sexual Well-being.

Sexual Frequency. Sexual frequency was evaluated using a single item, 8-point scale. Participants were asked to rate how often in the last 12 months had they had sex with their partner from *Less than once every few months* = 1 to *Multiple times a day* = 8.

Sexual Satisfaction. Sexual satisfaction was measured using a 5-item, 4-point modified version of the Multidimensional Sexuality Questionnaire, sexual satisfaction subscale (MSQ; Snell, Fisher, & Walters, 1993). Participants were asked to rate how characteristic of themselves they believe the provided statements to be, *Not at all characteristic of me* = 1 to *Very characteristic of me* = 4. Examples of statements include, “I am very satisfied with the way my sexual needs are currently being met,” and “My sexual

relationship is very good compared to most.," with higher ratings indicating that the statement was more characteristic of the participant. (α = .976).

Virtues. Participants were asked to rate their partner's virtues using the measures listed below.

Humility. Partner's humility was assessed using a 5-item Likert scale constructed from items taken from Bell and Fincham (2017), Davis et al. (2011), and Landrum (2011). Respondents were asked to rate their partner's interactions with others on a 7-point scale, *Disagree strongly* = 1 to *Strongly agree* = 7, with higher numbers indicating increased humility. Examples of these items include, "My spouse is willing to admit when he/she has made a mistake," and "He/she is NOT willing to [his/her] weaknesses." Increased ratings indicate more humility apart from 2 reverse-coded items. (α=.190).

As in Study 1, Item Response Theory (IRT), item characteristic curves, and item factor scores were used to split Humility into three sub-scales. Explicit humility (Hex), implicit humility (Him), and pride (Hpr). Hex became a 2-item 7-point Likert scale (*Corr.* = .753), Him a 1-item 7-point scale, and Hpr a 2-item 7-point scale (*Corr.* = .495).

Compassion. Partner's compassion was evaluated using a 4-item, 7-point modified version of Pommier (2011; α = .951). Participants rated their partner on the frequency they felt compassion for others from *Never* = 1 to *Always* = 7, with higher ratings indicating a greater frequency of compassionate feelings. Examples of these statements include, "When he/she sees someone feeling down, he/she wants to offer support," and "He/she likes to be there for others in times of difficulty."

Positivity. Partners positivity was assessed with a modified version of the Life Orientation Test (Scheier et al., 1994; α=.890). Participants were asked to rate their agreement with positivity statements about their partner on a 4-item 7-point Likert scale in regard to their partner. Agreement with these statements was rated *Strongly disagree* = 1 to

Strongly agree = 7 on items such as "In uncertain times, he/she usually expect the best," and "He/she see a lot of good in people." Higher ratings indicated more agreement with positive statements.

Responsible Actions (RAs). Participants were asked to rate the use of responsible actions in their relationship using the measures listed below.

Kindness, Gratitude, Affection, and Time Spent Together.

Kindness. A 4-item, 7-point Likert scale was used to evaluate the participant's agreement with kindness statements concerning their relationship. Participants were asked to rate their agreement from *Strongly disagree* = 1 to *Strongly agree* = 7 on items such as "I feel like my spouse looks for and enjoys doing things for me in our marriage.," and "We regularly do random acts of kindness for each other." Higher ratings indicated increased agreement with relationship-related kindness (α=.895).

Gratitude. Gratitude was measured using a 5-item, 7-point Likert scale. Participants were asked to rate their agreement with statements about gratitude in their relationship, *Strongly disagree* = 1 to *Strongly agree* = 7. Examples of these statements include, "My partner regularly expresses his/her gratitude to me in many ways," and "When I do something nice for my spouse, he/she expresses thanks," with higher ratings indicating more agreement (α=.920).

Affection. Affection was evaluated using a 6-item, 7-point Likert scale. Participants were asked to rate their agreement with affection statements, *Strongly disagree* = 1 to *Strongly agree* = 7. These statements included, "I will often find some way to tell my partner, 'I love you,'" and "My spouse shows love for me in many ways." Higher ratings are indicative of increased agreement (α=.919).

Time spent together. Time spent together was measured using a 5-item, 7-point Likert scale. Participants were asked to report their agreement with the provided statements from

Strongly disagree = 1 to *Strongly agree* = 7. Examples of these statements include, "We do activities together that we both enjoy," and "We make regular time to just be together and focus on each other." Higher ratings indicate more agreement except in the case of the single reverse coded item (α=.824).

KGAT. Similar to Study 1, IRT, item characteristic curves, and factor analysis indicated that. Kindness, Gratitude, Affection, and Time Spent Together were too highly correlated to be treated as separate scales. The scales were merged into a 15-item 7-point scale (3 kindness items, 4 gratitude items, 5 affection items, and 3 time spent together items) (α = .966).

Forgiveness. Forgiveness was measured using 7 items adapted from Fincham and Beach (2002). Participants were asked to rate how true the provided statement was of their partner on a 7-point scale, *Strongly disagree* = 1 to *Strongly agree* = 7. Examples of these statements include, "My partner is very forgiving when it comes to my weaknesses, flaws, and failures," and "When mistakes and misunderstandings occur in our relationship, we are quick to make peace." Higher ratings indicate increased forgiveness. (α=.833).

Analytic Plan

Similar to Study 1, aligned mean factor scores and variances of the virtues and RAs were used to estimate subgroups using an LPA (Figure 3). After the number of profiles was established through fit statistics and substantive evaluation, the class probabilities were used in a training model to evaluate sexual quality and control variables. Wald statistics were then used to discern significant differences between profiles and mean factor scores were compared. Uncertainty for the placement of individuals in class was addressed by allowing these participants to contribute to more than one class in proportion to the certainty with which they could be placed in a profile (i.e., the more uncertainty there was that an individual belonged to a profile, the less they contributed to that profile's estimates).

Dyadic data in Study 2 allowed me to assess the similarity between partner classifications. Posterior probabilities were used to create a three-by-three table representing self-profile membership and partner-profile membership for a possible nine combinations (see Table 14 in Results). Table 15 (see Results) shows the likelihood of partner-profile membership in relation to self-profile membership. Analyses were conducted using Mplus version 8.5 (Muthén & Muthén, 1998-2011).

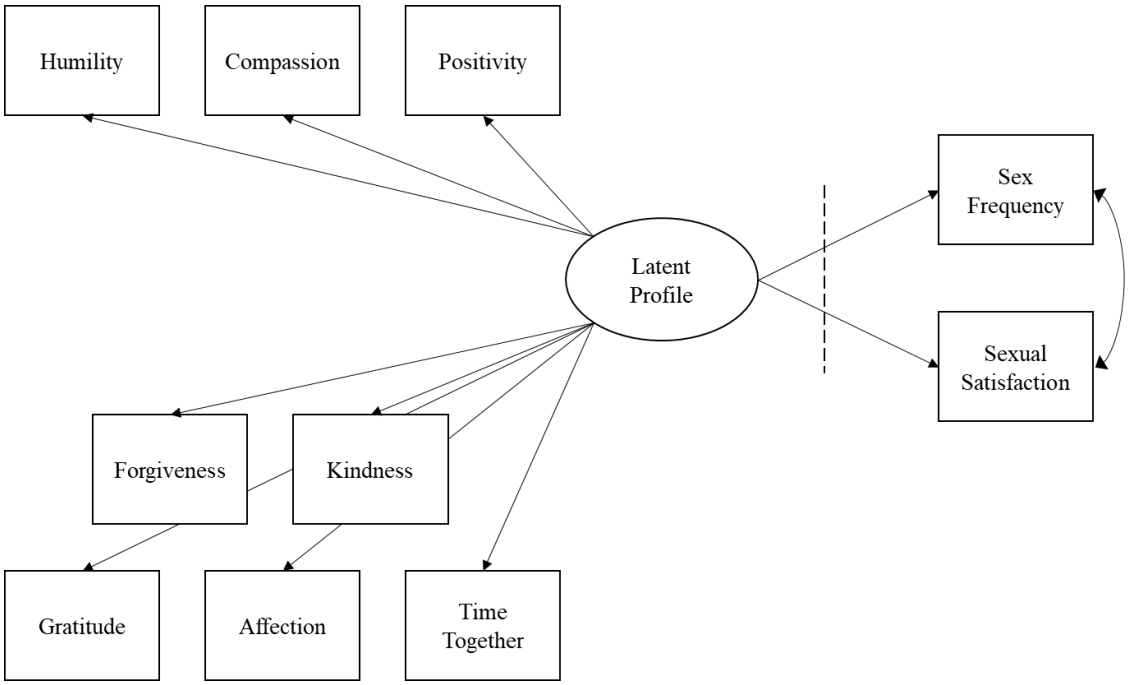

Figure 4. Study 2, latent profile model.

Chapter 4: Results

Study 1

Preliminary Analysis

To ensure that the result of these analyses would be accurate, the data set was screened for missing cases and for violations of assumptions. As few missing responses were noted a Full Information Maximum Likelihood estimation was used to account for item-level missing data (missing responses = 9). Skew and kurtosis for variables of interest fell well within tolerances of -1.457 (Disclosure) to 0.330 (Him) and -0.400 (Compassion) to 2.049 (Disclosure), respectively (Kline, 2016).

Pearson's correlations of the sexual, virtue, and RA variables can be found in Table 3. All variables have a positive correlation with one another, apart from Hpr which is entirely negative. Correlation strength ranges from -0.035 ($p < .010$), for Sexual satisfaction and Hpr, to 0.862 ($p < .010$), for Sexual satisfaction and Sexual flourishing.

Table 3.
Study 1 - Bivariate correlations

	Sex. Sat.	Sex. Flour.	KGAT	Disclo.	Humor	Aware.	Sacri.	Compas.	Positiv.	Hex.	Him.	Hpr.
Sex. Sat.	1	.862**	.651**	.541**	.467**	.597**	.544**	.189**	.396**	.208**	.221**	-0.035
Sex. Flour.	.862**	1	.697**	.622**	.553**	.671**	.602**	.247**	.378**	.289**	.250**	-.105**
KGAT	.651**	.697**	1	.732**	.692**	.827**	.674**	.386**	.461**	.462**	.347**	-.191**
Disclo.	.541**	.622**	.732**	1	.705**	.789**	.649**	.311**	.316**	.366**	.216**	-.138**
Humor	.467**	.553**	.692**	.705**	1	.757**	.607**	.340**	.290**	.401**	.251**	-.138**
Aware.	.597**	.671**	.827**	.789**	.757**	1	.722**	.361**	.390**	.417**	.293**	-.159**
Sacri.	.544**	.602**	.674**	.649**	.607**	.722**	1	.340**	.380**	.348**	.299**	-.136**
Compas.	.189**	.247**	.386**	.311**	.340**	.361**	.340**	1	.428**	.550**	.512**	-.397**
Positiv.	.396**	.378**	.461**	.316**	.290**	.390**	.380**	.428**	1	.422**	.429**	-.097**
Hex.	.208**	.289**	.462**	.366**	.401**	.417**	.348**	.550**	.422**	1	.583**	-.425**
Him	.221**	.250**	.347**	.216**	.251**	.293**	.299**	.512**	.429**	.583**	1	-.408**
Hpr.	-0.035	-.105**	-.191**	-.138**	-.138**	-.159**	-.136**	-.397**	-.097**	-.425**	-.408**	1

Notes. **p<.010 (two-tailed)
Sex Sat, Sexual Satisfaction; Sex Flour, Sexual flourishing; KGAT, Kindness gratitude affection time spent together; Disclo, Intimate disclosure; Aware, Awareness and support; Sacri, Sacrifice; Compas, Compassion; Positiv, Positivity; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

To account for the effects of relevant demographic factors on sexual well-being measures, variables such as country of residence, age, gender, education, and income, among

others, were used as controls. Of the control variables tested only eight had a significant effect. These included country of residence, age, gender of respondent, annual income, relationship type (living apart together and remarried), self-rated health, and ratings of partner health. Below, Table 4 lists the partial correlations controlling for these demographic factors which range from -0.064 between Sexual satisfaction and Hpr ($p < .010$) and 0.847 between Sexual satisfaction and Sexual flourishing ($p < .010$).

Table 4.
Study 1 - Partial correlations

	Sex. Sat.	Sex. Flour.	KGAT	Disclo.	Humor	Aware.	Sacri.	Compas.	Positiv.	Hex	Him	Hpr
Sex. Sat.	1.000	.847**	.621**	.514**	.451**	.568**	.520**	.201**	.343**	.172**	.177**	-.064*
Sex. Flour.	.847**	1.000	.670**	.597**	.539**	.645**	.583**	.254**	.328**	.257**	.212**	-.130**
KGAT	.621**	.670**	1.000	.714**	.682**	.813**	.656**	.378**	.410**	.425**	.303**	-.189**
Disclo.	.514**	.597**	.714**	1.000	.692**	.775**	.637**	.283**	.269**	.333**	.175**	-.122**
Humor	.451**	.539**	.682**	.692**	1.000	.747**	.596**	.320**	.252**	.375**	.223**	-.116**
Aware.	.568**	.645**	.813**	.775**	.747**	1.000	.711**	.345**	.335**	.381**	.253**	-.147**
Sacri.	.520**	.583**	.656**	.637**	.596**	.711**	1.000	.354**	.336**	.321**	.270**	-.144**
Compas.	.201**	.254**	.378**	.283**	.320**	.345**	.354**	1.000	.434**	.531**	.499**	-.303**
Positiv.	.343**	.328**	.410**	.269**	.252**	.335**	.336**	.434**	1.000	.391**	.390**	-.082**
Hex	.172**	.257**	.425**	.333**	.375**	.381**	.321**	.531**	.391**	1.000	.559**	-.399**
Him	.177**	.212**	.303**	.175**	.223**	.253**	.270**	.499**	.390**	.559**	1.000	-.400**
Hpr	-.064*	-.130**	-.189**	-.122**	-.116**	-.147**	-.144**	-.303**	-.082**	-.399**	-.400**	1.000

Notes. **p<.010 (two-tailed) *p<.050 (two-tailed)
Sex Sat, Sexual Satisfaction; Sex Flour, Sexual flourishing; KGAT, Kindness gratitude affection time spent together; Disclo, Intimate disclosure; Aware, Awareness and support; Sacri, Sacrifice; Compas, Compassion; Positiv, Positivity; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Latent Profile Analysis

The aligned factor score means of the virtues and RAs were used as the basis for profiles and were allowed to vary across profile as were their variances. Mplus iteratively estimated various combinations of cases in each of the profile solutions until an optimal solution with the specified number of profiles was found wherein the aligned factor score means and variances divided into the specified number of groups best fit the data. Solutions with different numbers of latent profiles were specified and fit statistics were compared to identify the model with the number of latent profiles that best fit the data. A three-profile solution was found to be the best fit for the data (see Table 5), versus a two-, four-, or five-profile solution, as it produced the highest entropy (0.929; indicating clear differentiation

between the profiles) and a significant change in the trajectory to graphed scores of AIC, BIC, and SSBIC. Additionally, the Lo-Mendell-Rubin likelihood ratio test showed that two versus three profiles (*LMR* = 89.783, $p < .001$) and three versus four profiles (*LMR* = 77.023, $p < .001$) were significantly different from one another. The profiles have been labelled *Low*, *Mid*, and *High*.

Table 5.
Study 1 latent profile analysis - Fit statistics.

No. of Profiles	*Log-likelihood*	*AIC*	*BIC*	*SSBIC*	*Entropy*	*LMR*
1 Profile	-21688.214	43416.428	43521.638	43458.105	-	-
2 Profiles	-19085.982	38253.964	38469.645	38339.403	0.879	5170.552***
3 Profiles	-17591.193	35306.385	35632.538	35435.585	0.929	2970.099***
4 Profiles	-16822.017	33810.035	34246.658	33982.996	0.917	1528.327***
5 Profiles	-16233.93	32675.861	33222.955	32892.584	0.920	1168.510*

Notes. Lower scores for Information Criteria measures indicate better fit. Higher values of entropy indicate better model classification. A bend in the trend line for log-likelihood, AIC, BIC, and SABIC and the higher entropy value pointed towards a three-class solution.
AIC, Akaike Information Criteria; BIC, Bayesian Information Criteria; SABIC, Sample Size-adjusted BIC, LMR, Lo-Mendell-Rubin likelihood ratio test.

Low, profile 1, contained 28% of the sample (n = 400) and the lowest mean factor scores for both virtues and RAs except for Hpr. Despite the general tendency to have the lowest comparative scores, responses in the *Low* profile tended towards the middle of the measures with the lowest mean score of 3.557 (KGAT, $p < .001$) and the highest at 4.500 (Humor, $p < .001$). *Mid*, profile 2, held 53% of the sample (n = 747) with comparatively moderate virtue and RA mean factor scores. Mean factor scores in the *Mid* profile tended towards the upper middle section of the measures with lowest being Hpr (4.199, $p < .001$) and the highest being Disclosure at 6.051 ($p < .001$). *High*, profile 3, contained 19% of the sample (n = 276) and had the highest mean factor scores for both virtues and RAs, except Hpr. *High* mean factor scores fall into the upper middle range of their scales, with Hpr at 4.880 ($p < .001$) at the lowest and Disclosure at the highest (6.880, $p < .001$). Results of the 3-profile analysis can be found in Table 6 and Figure 4.

Table 6.
Study 1 latent profile analysis – Intercept and mean factor score comparisons.

		Low (*n*=400)		*Mid* (*n*=747)		*High* (*n*=275)	
Variable	*Range*	*M*	*p*	*M*	*p*	*M*	*p*
KGAT	(1-7)	3.557	0.000	4.844	0.000	6.236	0.000
Disclosure	(1-7)	4.283	0.000	6.051	0.000	6.880	0.000
Humor	(1-7)	4.500	0.000	5.968	0.000	6.774	0.000
Awareness	(1-7)	4.266	0.000	5.944	0.000	6.838	0.000
Sacrifice	(1-7)	4.266	0.000	5.853	0.000	6.763	0.000
Compassion	(1-7)	4.064	0.000	4.597	0.000	5.702	0.000
Positivity	(1-7)	3.878	0.000	4.513	0.000	5.354	0.000
Hex.	(1-7)	3.779	0.000	4.353	0.000	5.452	0.000
Him.	(1-7)	4.007	0.000	4.379	0.000	5.179	0.000
Hpr.	(1-7)	4.218	0.000	3.801	0.000	3.120	0.000

Notes: KGAT, Kindness gratitude affection time spent together; Disclo, Intimate disclosure; Aware, Awareness and support; Sacri, Sacrifice; Compas, Compassion; Positiv, Positivity; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

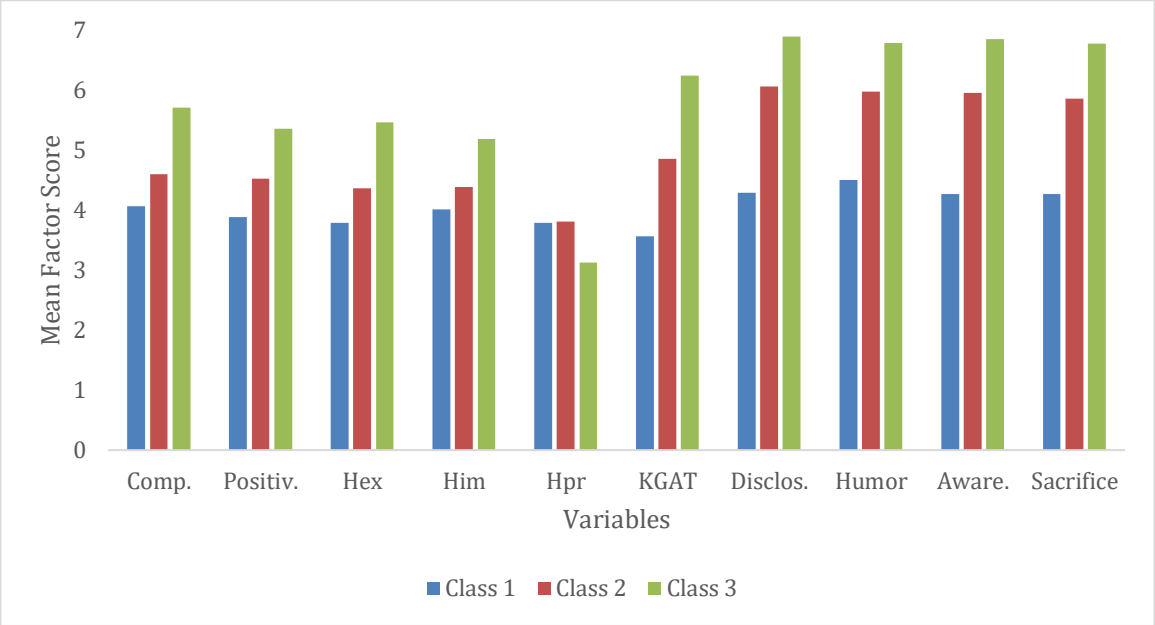

Figure 5. Latent profile analysis – Mean factor score comparisons.

Notes: KGAT, Kindness gratitude affection time spent together; Disclo, Intimate disclosure; Aware, Awareness and support; Sacri, Sacrifice; Compas, Compassion; Positiv, Positivity; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Latent Profile Training

Following Galovan et al. (2021), class probabilities were taken from the latent profile analysis to create a training model, which prevented shifts in latent profile classification when control variables and outcomes were included in the model. Using this model, I evaluated possible differences in sexual quality variable scores and correlations among

variables, while accounting for controls. To better understand distinguishing features of the latent profiles, demographic factors were also evaluated in the training model by constraining scores across profiles and evaluating Wald statistics to determine if the constraints worsened model fit (see Table 7). Control variables were mostly undifferentiated between profiles, however, self-rated health (Health – Self) did differ between the *Low* (*M* = 3.279) and *Mid*/*High* profiles. (*M* = 3.826, *M* =3.912) as did ratings of partner health (Health – Partner) between all profiles (*Low, M* = 3.499; *Mid, M* = 3.924, *High, M* = 4.138).

Table 7.
Study 1 latent profile training – Control means factor scores.

		Low (a)		*Mid* (b)		*High* (c)		*Omnibus Wald*
Variable	*Range*	*M*	*p*	*M*	*p*	*M*	*p*	
Country	(1 US., 0 Can.)	0.887	0.000	0.852	0.000	0.902	0.000	6.645
Age	(18 – 73)	35.402	0.000	36.563	0.000	35.413	0.000	4.830
Gender - Self	(1 F, 0 M)	0.557	0.000	0.538	0.000	0.626	0.000	7.019
Gender – Partner	(1 F, 0 M)	0.437	0.000	0.467	0.000	0.399	0.000	4.338
Minority	(1 yes, 0 no)	0.287	0.000	0.280	0.000	0.309	0.000	0.888
Education	(1 - 7)	4.335	0.000	4.502^{c}	0.000	4.145^{b}	0.000	18.474^{*}
Income	(1 - 12)	5.498	0.000	5.603	0.000	5.459	0.000	1.110
Children	(1 yes, 0 no)	0.579	0.000	0.595	0.000	0.551	0.000	1.689
Heterosexual	(1 yes, 0 no)	-	-	-	-	-	-	-
Bisexual	(1 yes, 0 no)	0.175	0.000	0.208	0.000	0.147	0.000	4.877
Homosexual	(1 yes, 0 no)	0.084	0.000	0.118	0.000	0.086	0.000	6.599
Length of relationship	(3 – 52 yrs)	8.548	0.000	9.261	0.000	9.400	0.000	3.148
First marriage	(1 yes, 0 no)	-	-	-	-	-	-	-
Living apart together	(1 yes, 0 no)	0.120	0.000	0.108	0.000	0.106	0.000	0.512
Cohabitating	(1 yes, 0 no)	0.347	0.000	0.298	0.000	0.310	0.000	3.011
Separated	(1 yes, 0 no)	0.019^{c}	0.004	0.003	0.115	0.000^{a}	0.323	10.393^{*}
Divorced	(1 yes, 0 no)	0.010	0.043	0.022	0.000	0.006	0.132	6.960
Remarried	(1 yes, 0 no)	0.071	0.000	0.063	0.000	0.068	0.000	0.323
Health – Self	(1 – 5)	$3.279^{b,c}$	0.000	3.826^{a}	0.000	3.912^{a}	0.000	109.215^{*}
Health - Partner	(1 – 5)	$3.499^{b,c}$	0.000	$3.924^{a,c}$	0.000	$4.138^{a,b}$	0.000	86.386^{*}

*Note. *p<.050*

As shown in Figure 5, the mean factor scores for Sexual satisfaction and Sexual flourishing for each profile followed the same trend as the virtues and RAs in their profiles. The mean factor scores for both sexual variables fall to the middle of their scales in the *Low*

profile (Sex. Sat. 3.490, $p < .001$; Sex. Flour. 3.088, $p < .001$), the upper-middle values in *Mid* (Sex. Sat. 4.851, $p < .001$; Sex. Flour. 4.122, $p < .001$), and at the upper end of the scale in *High* (Sex. Sat. 5.593, $p < .001$; Sex. Flour. 4.760, $p < .001$) (see also Table 9).

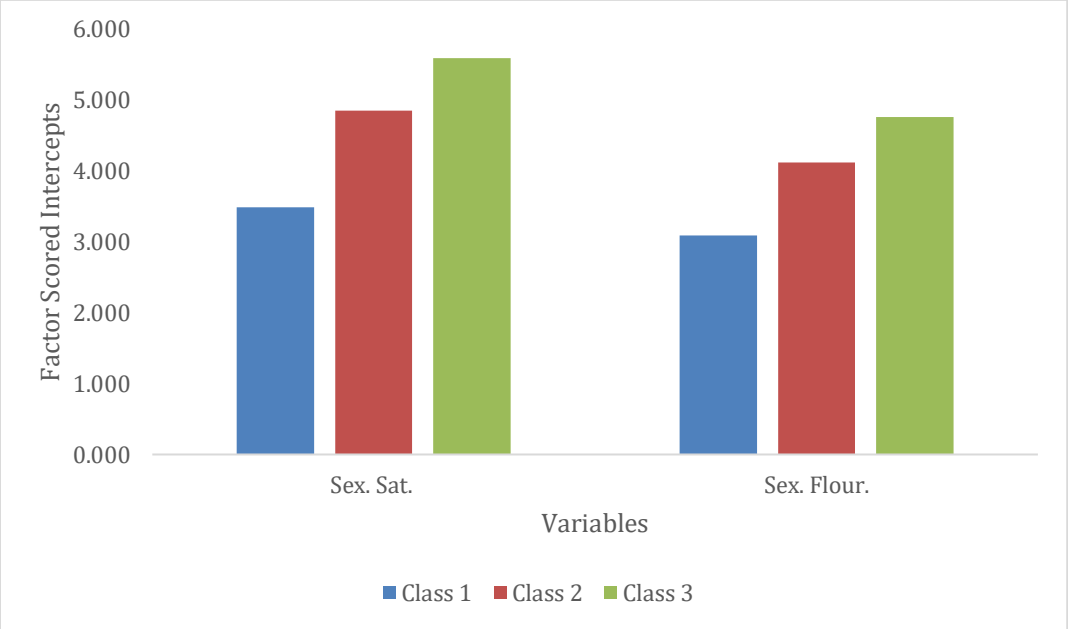

Figure 6. Study 1 latent profile training – Mean factor comparison of sexual variables.

Correlations between the sexual variables increased from one profile to the next in the same order as the mean factor scores. The with the lowest correlation in the *Low* profile (0.686, $p < .001$) and the largest in the *High* profile (0.855, $p < .001$). Correlations between the RAs generally followed a trend of decreased correlation with increase in profile, Disclosure with Sacrifice (*Low* 0.339, $p < .001$; *Mid* 0.060, $p = .105$, *High* 0.090, $p = .092$) being the exception. Of the RAs the highest correlation was KGAT with Awareness (*Low* 0.655, $p < .001$) while the lowest significant correlation was Awareness with Sacrifice (High 0.124, $p < 0.050$).

Virtues did not have a distinct trend in their correlations by profile with some correlations having increased by class, such as Compassion with Positivity, while others decreased, Compassion with Hex, or held a mixed relationship, Hex with Hpr (Table 8). Of the virtue correlations Compassion with Hex in the *Low* profile was the largest (0.581, $p < .001$) and the lowest significant correlations was Positivity with Hpr (*Mid* 0.088, $p < .050$).

Correlations between RAs and virtues were mostly likely to be significant when in the *Mid* profile while many correlations in both the *Low* and *High* groups did not attain significance. (Table 8). Of the significant correlations KGAT with Hex was the largest (*Mid* 0.218, $p < .001$) and the lowest was Sacrifice with Hex (*Mid* 0.095, $p < .050$). All Study 1 latent profile training correlations can be found in Table 8.

Table 8.
Study 1 latent profile training – Correlation comparisons.

	Low		*Mid*		*High*	
Variable	*Corr.*	*p*	*Corr.*	*p*	*Corr.*	*p*
Sexual Satisfaction with						
Sexual Flourishing	0.686	0.000	0.779	0.000	0.855	0.000
KGAT with						
Disclosure	0.556	0.000	0.255	0.000	0.243	0.000
Humor	0.413	0.000	0.259	0.000	0.180	0.001
Awareness	0.655	0.000	0.523	0.000	0.422	0.000
Sacrifice	0.383	0.000	0.179	0.000	0.168	0.010
Disclosure with						
Humor	0.437	0.000	0.227	0.000	0.057	0.244
Awareness	0.518	0.000	0.305	0.000	0.167	0.003
Sacrifice	0.339	0.000	0.060	0.105	0.090	0.092
Humor with						
Awareness	0.493	0.000	0.293	0.000	0.137	0.007
Sacrifice	0.284	0.000	0.058	0.144	-0.009	0.839
Awareness with						
Sacrifice	0.425	0.000	0.175	0.000	0.124	0.033
Compassion with						
Positivity	0.222	0.002	0.282	0.000	0.366	0.000
Hex	0.581	0.000	0.329	0.000	0.288	0.000
Him	0.541	0.000	0.326	0.000	0.371	0.000
Hpr	-0.449	0.000	-0.267	0.000	-0.257	0.000
Positivity with						
Hex	0.222	0.000	0.176	0.000	0.393	0.000
Him	0.231	0.000	0.331	0.000	0.354	0.000
Hpr	0.067	0.242	0.088	0.013	-0.112	0.038
Hex with						
Him	0.531	0.000	0.388	0.000	0.560	0.000
Hpr	-0.526	0.000	-0.191	0.000	-0.403	0.000
Him with						
Hpr	-0.432	0.000	-0.190	0.000	-0.482	0.000
KGAT with						
Compassion	-0.065	0.285	0.116	0.004	0.133	0.021
Positivity	0.123	0.052	0.214	0.000	0.193	0.002
Hex	-0.084	0.177	0.218	0.000	0.192	0.001
Him	-0.034	0.579	0.112	0.003	0.138	0.018
Hpr	0.185	0.001	-0.060	0.062	-0.033	0.559
Disclosure with						
Compassion	-0.028	0.641	0.104	0.003	0.122	0.014
Positivity	0.054	0.353	-0.108	0.002	0.046	0.351

Hex	-0.034	0.553	0.170	0.000	0.087	0.069
Him	-0.114	0.053	-0.035	0.337	-0.014	0.796
Hpr	0.142	0.008	-0.155	0.000	-0.116	0.048
Humor with						
Compassion	0.070	0.255	0.103	0.013	0.084	0.105
Positivity	-0.044	0.472	-0.068	0.076	0.103	0.119
Hex	0.098	0.108	0.141	0.000	0.084	0.169
Him	0.026	0.665	-0.037	0.332	0.013	0.829
Hpr	0.072	0.189	-0.059	0.102	0.003	0.956
Awareness with						
Compassion	0.007	0.913	0.129	0.000	0.113	0.047
Positivity	0.031	0.606	0.108	0.003	0.166	0.007
Hex	-0.003	0.957	0.155	0.000	0.186	0.001
Him	-0.015	0.795	0.016	0.656	0.130	0.027
Hpr	0.134	0.011	-0.108	0.001	-0.178	0.003
Sacrifice with						
Compassion	0.088	0.127	0.065	0.076	0.115	0.046
Positivity	0.165	0.001	0.112	0.002	-0.030	0.585
Hex	-0.038	0.551	0.095	0.011	-0.021	0.714
Him	0.124	0.034	0.022	0.581	0.097	0.096
Hpr	0.073	0.206	-0.025	0.458	-0.076	0.214

Notes: Corr, Correlation; KGAT, Kindness gratitude affection time spent together; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Wald comparisons were made using a Bonferroni p-value of .0167 (0.050/3) to ensure that the number of comparisons being made simultaneously did not affect how many significant relationships were found. Of the sexual variables and RAs all profile mean factor scores were statistically distinct. Of the virtues only Hpr was not fully differentiated between classes as *Low* (*M* = 3.782) and *Mid* (*M* = 3.801) did not statistically differ.

Table 9.
Study 1 latent profile training – Intercept and mean factor score comparisons with Wald values.

Variable	*Range*	*Low* (a)	*Mid* (b)	*High* (c)	*Omnibus Wald*
Sexual Variables					
Sexual Satisfaction	(1-6)	$3.534^{b,c}$	$4.904^{a,c}$	$5.637^{a,b}$	507.386^{***}
Sexual Flourishing	(1-5)	$3.135^{b,c}$	$4.181^{a,c}$	$4.818^{a,b}$	670.724^{***}
Responsible Actions					
KGAT	(1-7)	$3.557^{b,c}$	$4.844^{a,c}$	$6.236^{a,b}$	2395.029^{***}
Disclosure	(1-7)	$4.283^{b,c}$	$6.051^{a,c}$	$6.880^{a,b}$	2722.662^{***}
Humor	(1-7)	$4.500^{b,c}$	$5.968^{a,c}$	$6.774^{a,b}$	1792.391^{***}
Awareness	(1-7)	$4.265^{b,c}$	$5.944^{a,c}$	$6.838^{a,b}$	4166.734^{***}
Sacrifice	(1-7)	$4.266^{b,c}$	$5.853^{a,c}$	$6.763^{a,b}$	1784.871^{***}
Virtues					
Compassion	(1-7)	$4.064^{b,c}$	$4.597^{a,c}$	$5.702^{a,b}$	337.584^{***}
Positivity	(1-7)	$3.878^{b,c}$	$4.513^{a,c}$	$5.354^{a,b}$	314.503^{***}
Hex	(1-7)	$3.779^{b,c}$	$4.353^{a,c}$	$5.452^{a,b}$	449.417^{***}
Him	(1-7)	$4.007^{b,c}$	$4.379^{a,c}$	$5.179^{a,b}$	192.196^{***}

Hpr	(1-7)	3.782[c]	3.801[c]	3.120[a,b]	136.415[***]
Controls *(mean centred)*					
Country	(1 US, 0 Can)	0.887	0.852	0.902	6.645
Age	(18-73)	-0.612	0.549	-0.601	4.830
Gender - Self	(1 M, 0 F)	0.557	0.538	0.626	7.019
Income	(1-12)	-0.048	0.057	-0.086	1.110
L.A.T.	(1 yes, 0 no)	0.120	0.108	0.107	0.505
Remarriage	(1 yes, 0 no)	0.071	0.063	0.068	0.329
Health - Self	(1-5)	-0.410[b,c]	0.137[a]	0.223[a]	109.215[***]
Health - Partner	(1-5)	-0.347[b,c]	0.078[a,c]	0.292[a,b]	86.386[***]

Note: The superscript indicates a significant difference ($p \leq .001$) between the listed value and its counterpart in the indicated class.
[***] $p < .001$
Uncentred control means can be found in Table7.
KGAT, Kindness gratitude affection time spent together; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride; Can, Canada; LAT, Living apart together.

Study 2

Item Response Theory, Alignment, and Factor Scores

As in Study 1, item response theory (IRT) analyses and aligned factor scores were used to reduce the amount of noise in the data. Changes to scale composition can be found in Chapter 3: Methods. Kindness, Gratitude, Affection, and Time Spent Together were combined to form one scale, KGAT, due to factor loading analysis done as part of IRT. Similar to Study 1, Humility was split into three subscales: Explicit humility (Hex), implicit humility (Him), and pride (Hpr). While all other scales were aligned and their mean factor scores used in later analysis, Humility subscales underwent multigroup analysis due to a lack of items per scale to perform alignment. Scales were aligned using participant gender and relationship composition (same-sex male, same-sex female, mixed-sex male, mixed-sex female) and the single factor score was used per virtue, RA, and sexual quality variables.

Preliminary Analysis

Skew and kurtosis for the variables of interest after IRT and alignment fall well within acceptable parameters (skew -0.588 to 0.316; kurtosis -0.833 to 0.010; Kline, 2016). Due to the small numbers of missing cases, between 0 and 4 in variables of interest and 0 and 28 in control variables, Full Information Maximum Likelihood estimation accounted for item-level missing data.

Bivariate Pearson's correlations between sexual variables, virtues, and RAs can be found in Table 10. Except for Hpr, all correlations all correlations were in the positive direction. Correlations were highest between Hex and Him (0.853, $p < .010$) followed by Hex and Hpr (-0.720, $p < .010$), and KGAT and Forgiveness (0.717, $p < .010$). The lowest significant correlation was between Sexual frequency and Forgiveness (0.130, $p < 0.10$).

Table 10.
Study 2 preliminary analysis - Bivariate correlations.

	Sex. Freq.	Sex. Sat.	KGAT	Forgiv.	Compas.	Positiv.	Hex.	Him.	Hpr.
Sex. Freq.	1	.594**	.250**	.130**	.143**	.254**	.158**	.193**	-0.003
Sex. Sat.	.594**	1	.550**	.440**	.343**	.414**	.355**	.410**	-.286**
KGAT	.250**	.550**	1	.717**	.671**	.648**	.666**	.670**	-.559**
Forgiv.	.130**	.440**	.717**	1	.537**	.554**	.570**	.609**	-.483**
Compas.	.143**	.343**	.671**	.537**	1	.603**	.625**	.583**	-.513**
Positiv.	.254**	.414**	.648**	.554**	.603**	1	.602**	.584**	-.426**
Hex.	.158**	.355**	.666**	.570**	.625**	.602**	1	.853**	-.720**
Him.	.193**	.410**	.670**	.609**	.583**	.584**	.853**	1	-.686**
Hpr.	-0.003	-.286**	-.559**	-.483**	-.513**	-.426**	-.720**	-.686**	1

Notes. **. Correlation is significant at the 0.01 level (2-tailed)
Sex Freq, Sexual frequency; Sex Sat, Sexual satisfaction; KGAT, Kindness gratitude affection time spent together; Forgiv, Forgiveness; Compas, Compassion; Positiv, Positivity; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Control variables were added to account for the effect of demographic factors on the sexual variables. Of the demographic factors assessed only age, time lived together, having lived together before marriage, self-reported health, and partner-reported health were found to be significant. Table 11 contains the partial correlations of the sexual variables, virtues, and RAs accounting for the effect of these demographic factors. The largest correlation was Hex with Him (0.843, $p < .010$) followed by Hex with Hpr (-0.712, $p < .010$) and KGAT with Forgiveness (0.702, $p < .010$). The smallest significant correlation was 0.114 between Sexual frequency and Forgiveness ($p < .010$).

Table 11.
Study 2 preliminary analysis - Partial correlations.

	Sex. Freq.	Sex. Sat.	KGAT	Forgiv.	Compas.	Positiv.	Hex.	Him.	Hpr.
Sex. Freq.	1.000	.552**	.226**	.114**	.139**	.204**	.142**	.179**	-0.031
Sex. Sat.	.552**	1.000	.510**	.419**	.309**	.337**	.310**	.376**	-.280**
KGAT	.226**	.510**	1.000	.702**	.646**	.603**	.634**	.643**	-.537**
Forgiv.	.114**	.419**	.702**	1.000	.515**	.528**	.544**	.589**	-.464**
Compas.	.139**	.309**	.646**	.515**	1.000	.574**	.597**	.557**	-.495**
Positiv.	.204**	.337**	.603**	.528**	.574**	1.000	.560**	.545**	-.392**

Hex.	.142**	.310**	.634**	.544**	.597**	.560**	1.000	.843**	-.712**
Him.	.179**	.376**	.643**	.589**	.557**	.545**	.843**	1.000	-.675**
Hpr.	-0.031	-.280**	-.537**	-.464**	-.495**	-.392**	-.712**	-.675**	1.000

Notes. **. Correlation is significant at 0.01 level
Sex Freq, Sexual frequency; Sex Sat, Sexual satisfaction; KGAT, Kindness gratitude affection time spent together; Forgiv, Forgiveness; Compas, Compassion; Positiv, Positivity; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Latent Profile Analysis

The means and variances of the virtues and RAs were used to construct the LPA with MLR as the estimator to account for non-independence between couple responses. Trends in the log-likelihood, information criteria, and high entropy (0.930) identified a three-profile model best fit the data. Table 12 contains the fit statistics for a number of other profile models. A five-profile model was not investigated as one was not supported by the data.

Table 12.
Study 2 latent profile- Fit statistics.

No. of Classes	*Log-likelihood*	*AIC*	*BIC*	*SSBIC*	*Entropy*	*LMR*
1 Class	-13146.589	26321.178	26392.785	26348.315	-	-
2 Classes	-11299.283	22656.565	22804.893	22712.777	0.891	3660.315***
3 Classes	-10556.825	21201.649	21426.699	21286.936	0.930	1471.131***
4 Classes	-10076.556	20271.113	20572.884	20385.475	0.888	952.645

Notes. Lower scores for Information Criteria measures indicate better fit. Higher values of entropy indicate better model classification. A bend in the trend line for log-likelihood, AIC, BIC, and SSBIC and the higher entropy value pointed towards a three-class solution.
AIC, Akaike Information Criteria; BIC, Bayesian Information Criteria; SABIC, Sample Size-adjusted BIC, LMR, Lo-Mendell-Rubin likelihood ratio test.

The profiles of the model were labelled as *Low, Mid*, and *High*. *Low*, profile 1, included 46.20% of cases and had the lowest means, excepting Hpr, across both virtues and RAs ranging between Him at 3.702 ($p < .001$) and Compassion at 4.112 ($p < .001$). *Mid*, profile 2, was the largest and included 47.70% of cases and ranged between Hpr at 2.870 ($p<.001$) and Compassion at 5.505 ($p < .001$). Profile 3, *High*, included 6.10% of the sample and had the highest means, excluding Hpr, between Positivity (5.911, $p < .001$) and Him (6.864, $p < .001$). Table 13 shows a variable-by-variable comparison of means across profiles with a visual depiction in Figure 6.

Table 13.
Study 2 latent profile analysis – Mean factor score comparisons.

	Low (*n*=568)	*Mid* (*n*=587)	*High* (*n*=75)

Variable	*Range*	*M*	*p*	*M*	*p*	*M*	*p*
KGAT	(1-7)	3.711	0.000	5.183	0.000	6.225	0.000
Forgiveness	(1-7)	4.025	0.000	5.212	0.000	5.919	0.000
Compassion	(1-7)	4.112	0.000	5.505	0.000	6.798	0.000
Positivity	(1-7)	4.076	0.000	5.145	0.000	5.911	0.000
Hex	(1-7)	3.941	0.000	5.489	0.000	6.812	0.000
Him	(1-7)	3.702	0.000	5.271	0.000	6.864	0.000
Hpr	(1-7)	4.035	0.000	2.870	0.000	1.098	0.000

Notes: KGAT, Kindness gratitude affection time spent together; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Figure 7. Mean factor score comparisons of virtues and RAs by profile.

Notes: KGAT, Kindness gratitude affection time spent together; Forgive, Forgiveness; Comp, Compassion; Positiv, Positivity; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

As noted in the analysis plan (Chapter 3), with dyadic data I was able to assess latent profile combinations for partners (see Tables 14 and 15). Overall, the largest couple grouping was *Low-Low* (35.4%) followed by *Mid-Mid* (33.4%) and *Mid-Low* (13.0%) while *Low-High* (0.3%) and *High-Low* (0.1%) pairings made up less than 1% of the total sample. 71.0% of partners had the same profile as their as their partner (χ^2 (*df*=4) =250.059, *p*<.001) with moderate agreement on the classifications (*Kappa*=0.477, Landis and Koch, 1977). For example, of individuals who fit the *Low* profile, 62.1% of their partners were also in the *Low* group. Couples with at least one *High* profile partner made up the smallest percentage of the sample (10.1%) and were the least likely to have a partner from the *Low* group.

Table 14.
Study 2 latent profile analysis – Self vs partner crosstabulation (overall).

		Partner			
		Low	*Mid*	*High*	Total
Self	*Low*	217.621 35.4%	50.882 8.3%	1.569 0.3%	270.072 44.00%
	Mid	79.718 13.0%	205.370 33.4%	20.818 3.4%	305.906 49.80%
	High	0.626 0.1%	25.107 4.1%	13.289 2.2%	39.022 6.40%
	Total	297.965 48.50%	281.359 45.80%	35.677 5.90%	615 100.20%

Note. Categories may not sum to 100% due to rounding errors.

Table 15.
Study 2 latent profile analysis – Self vs partner crosstabulation (Likelihood by Self-profile).

		Partner		
		Low	*Mid*	*High*
Self	*Low*	62.1%	37.3%	0.6%
	Mid	34.2%	53.8%	12.0%
	High	3.6%	74.8%	21.6%

According to the concordance analysis those couples who both fell within the *High* profile had the highest reported weighted mean scores of Sexual satisfaction (M = 4.873). Mean reported Sexual satisfaction decreased in an expected pattern from *High* to *Low* (M = 2.855), with mixed profile couples falling in between (Table 16). Those couples in *High-Low* or *Low-High* profiles were the exception with the lowest mean scores (M = 0.984).

Table 16.
Study 2 latent profile analysis – Self and partner sexual satisfaction by profile combinations.

Self and Partner Profile Combination	*n*	*Mean sex satisfaction* [a]
High-High	13.289	4.873
High-Mid, Mid-High	45.925	4.289
Mid-Mid	205.370	3.926
Mid-Low, Low-Mid	130.600	3.707
Low-Low	217.621	2.855
Low-High, High-Low	2.195	0.984

Notes. [a] Mean weighted by group size. As latent profile analysis allows for partial cases, cell sizes are not whole numbers.

Latent Profile Analysis – Training

As in Study 1, class probabilities from the initial latent profile analysis were used in a training model to understand how the sexual variable means would distribute and how

correlations differ for virtues and RAs per profile. Figure 7 shows the mean scores of sexual frequency and sexual satisfaction controlling for age, length of time lived together, if the couple lived together before marriage, self-reported health, and partner-reported health. Both sexual frequency and sexual satisfaction followed the same trend as the positively oriented virtutes and RAs, with the lowest means in the *Low* group (Sex. Freq. 4.728, $p < .001$; Sex. Sat. 2.993, $p < .001$ and the highest in *High* (Sex. Freq. 5.566, $p < .001$; Sex. Sat. 4.448, $p < .001$) (Figure 7).

Table 17.
Study 2 latent profile analysis – Demographics by profile.

		Low (a)		*Mid* (b)		*High* (c)		*Omnibus Wald*
Variable	*Range*	*M*	*p*	*M*	*p*	*M*	*p*	
Country	(1 US, 0 Can.)	0.449	0.000	0.530	0.000	0.639	0.000	5.750
Age	(18-89)	45.660	0.000	45.043	0.000	47.660	0.000	0.988
Gender	(1 M, 0 F)	0.440[c]	0.000	0.500	0.000	0.637[a]	0.000	13.360*
Same-sex relationship	(1 yes, 0 no)	0.169	0.000	0.170	0.000	0.062	0.157	5.237
Minority	(1 yes, 0 no)	0.237	0.000	0.222	0.000	0.296	0.001	0.713
Education	(1-6)	3.705	0.000	3.679	0.000	3.494	0.000	0.502
Income	(1-11)	3.718	0.000	3.668	0.000	3.825	0.000	0.206
Length of time lived together	(0.25-66)	18.602	0.000	18.176	0.000	16.105	0.000	0.596
Married	(1 yes, 0 no)	0.812	0.000	0.804	0.000	0.850	0.000	0.402
Remarried	(1 yes, 0 no)	0.144	0.000	0.152	0.000	0.192	0.009	0.512
Lived together before marriage	(1-4)	1.676	0.000	1.705	0.000	1.624	0.000	1.200
Children	(1 yes, 0 no)	0.729	0.000	0.698	0.000	0.761	0.000	1.190
Health – Self	(1-5)	3.490[c]	0.000	3.909	0.000	4.096[a]	0.000	27.885*
Health – Partner	(1-5)	3.501[c]	0.000	3.944	0.000	4.215[a]	0.000	33.837*

*Note. *p<.050*

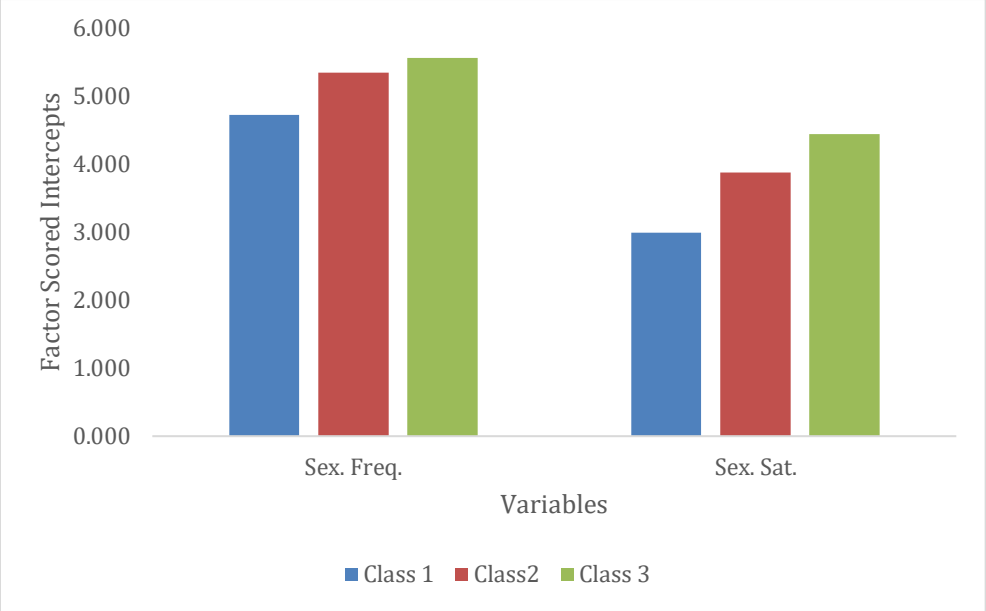

Figure 8. Mean factor score comparisons of sexual variables by profile.

Across all profiles sexual satisfaction and sexual frequency were significantly and highly correlated (Table 18). The same trend did not appear for the correlations between the virtues and RAs. Those in the *Low*-profile group saw the most significant correlations between virtues and RAs, with only positivity and Hpr displaying a non-significant correlation (-0.078, $p = .101$). Significant effect sizes ranged from small, between forgiveness and Hpr (-0.130, $p < .050$), to large, between Hex and Him (0.636, $p < .001$). The *Mid* profile group showed an increased number of non-significant correlations (Table 17), but still ranged from small, positivity and Hpr (0.107, $p < .050$), to large, Hex and Him (0.641, $p < .001$). Again, the *High* profile group showed an increase in non-significant correlations with only five showing a significant p-value (Compassion and Hpr, -0.557, $p < .001$; Positivity and Hex, 0.290, $p < .050$; Positivity and Him, 0.423, $p = .001$; Hex and Him, 0.851, $p < .001$; Hex and Hpr, -0.713, $p < .001$) and two approaching significance (KGAT and Compassion, -0.212, $p = 0.068$; Compassion and Hex, 0.285, $p = .051$).

Table 18.
Latent profile training – Class correlations comparisons

	Low		*Mid*		*High*	
Variable	*Corr.*	*p*	*Corr.*	*p*	*Corr.*	*p*
Sexual Satisfaction with						

	Sexual Frequency	0.546	0.000	0.532	0.000	0.683	0.000
KGAT with							
	Forgiveness	0.584	0.000	0.379	0.000	0.112	0.500
	Compassion	0.391	0.000	0.380	0.000	-0.212	0.068
	Positivity	0.371	0.000	0.322	0.000	0.114	0.450
	Hex	0.229	0.000	0.249	0.000	0.022	0.871
	Him	0.282	0.000	0.221	0.000	0.157	0.261
	Hpr	-0.231	0.000	-0.056	0.308	0.217	0.141
Forgiveness with							
	Compassion	0.240	0.000	0.168	0.001	-0.025	0.831
	Positivity	0.324	0.000	0.178	0.000	-0.064	0.604
	Hex	0.170	0.009	0.128	0.005	0.052	0.698
	Him	0.268	0.000	0.212	0.000	0.055	0.623
	Hpr	-0.130	0.049	-0.061	0.256	0.054	0.685
Compassion with							
	Positivity	0.336	0.000	0.308	0.000	0.001	0.994
	Hex	0.263	0.000	0.212	0.000	0.285	0.051
	Him	0.234	0.000	0.069	0.212	-0.006	0.976
	Hpr	-0.228	0.000	-0.014	0.770	-0.557	0.000
Positivity with							
	Hex	0.243	0.000	0.169	0.001	0.290	0.034
	Him	0.233	0.000	0.122	0.012	0.423	0.001
	Hpr	-0.078	0.101	0.107	0.033	0.028	0.889
Hex with							
	Him	0.636	0.000	0.641	0.000	0.851	0.000
	Hpr	-0.500	0.000	-0.358	0.000	-0.713	0.000
Him with							
	Hpr	-0.409	0.000	-0.266	0.000	-0.309	0.255

Notes: KGAT, Kindness gratitude affection time spent together; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Table 19 shows the results of wald testing, both omnibus and per profile. The *p-value* for this test was decreased to .0167 to account for the number of comparisons being made simultaneously. Of the sexual variables all profile means were significantly different from one another except for sexual frequency in the *Mid* and *High* profiles. All virtues and RAs held significantly distinct means between profiles. Of the control variables found to be significant for sexual satisfaction and sexual frequency only Health, for both self- and partner-rated, was significantly different between profiles, though *Mid* and *High* profiles were not distinct.

Table 19.
Latent profile training – Mean/intercept factor scores and Wald values

Variable	*Range*	*Low* (a)	*Mid* (b)	*High* (c)	*Omnibus Wald*
Sexual variables					
Sex. Freq.	(1-9)	4.649[b,c]	5.260[a]	5.498[a]	16.586[***]
Sex. Sat.	(1-5)	2.996[b,c]	3.878[a,c]	4.440[a,b]	123.611[***]
Responsible actions					
KGAT	(1-7)	3.711[b,c]	5.183[a,c]	6.225[a,b]	839.864[***]
Forgiveness	(1-7)	4.025[b,c]	5.212[a,c]	5.919[a,b]	554.810[***]
Virtues (partner-report)					
Compassion	(1-7)	4.112[b,c]	5.505[a,c]	6.798[a,b]	1864.206[***]
Positivity	(1-7)	4.076[b,c]	5.145[a,c]	5.911[a,b]	685.068[***]
Hex	(1-7)	3.941[b,c]	5.489[a,c]	6.812[a,b]	2709.275[***]
Him	(1-7)	3.702[b,c]	5.271[a,c]	6.864[a,b]	5789.820[***]
Hpr	(1-7)	4.035[b,c]	2.870[a,c]	1.098[a,b]	5960.039[***]
Controls *(mean-centred)*					
Age	(18-89)	0.173	-0.444	2.173	0.988
Time Living Together		0.112	-0.377	-2.404	1.202
Lived Together Before Marriage		1.676	1.705	1.624	0.512
Health - Self	(1-5)	-0.236[b,c]	0.183[a]	0.370[a]	27.887[***]
Health - Partner	(1-5)	-0.250[b,c]	0.190[a]	0.460[a]	33.277[***]

Notes. The superscript indicates a significant difference ($p \leq .001$) between the listed value and its counterpart in the indicated profile.
[***] $p < .001$
Uncentred control means can be found in Table 17.
Sex Freq, Sexual frequency; Sex Sat, Sexual satisfaction; KGAT, Kindness gratitude affection time spent together; Hex, Explicit humility; Him, Implicit humility; Hpr, Pride.

Chapter 5: Discussion

Using a variant of the strong relationality model (Galovan & Schramm, 2018), in this thesis I evaluated what relationship may exist between virtues, responsible actions (RAs), and variables of sexual quality through the use of latent profile analysis with data from two studies. This thesis adds to our understanding of couples' sexual relationships in at least three ways. First, both studies provided evidence for a three-profile model of virtues and responsible actions despite differences in datatype (single-respondent vs dyadic couple data) and in reporting participant for the virtues and RAs (self- vs partner- report). Further, these studies followed a similar trend of the lowest profile aggregating around the middle response option and increasing to the top end of their scales by the third profile (*High)*. Latent profile training models using these profiles revealed that in both studies the intercepts of sexual satisfaction, sexual flourishing, and sexual frequency followed the same trend as the virtues and RAs with the lowest factor scored intercepts appearing in the *Low*-profile group and increasing through to the *High*-profile group. The replication of these result provides strong evidence for the hypothesis that higher reported levels of virtues and RAs are correlated with increased sexual well-being.

The use of dyadic data in Study 2 allowed for an exploration of within-dyad patterns of virtues and responsible actions and their association with sexual quality. The second hypothesis for Study 2 was supported, as participants were more likely to be categorized in the same profile as their partner (see Table 15). Additionally, the largest groups of profile combinations were those of *Mid-Mid* (n = 205.370) and *Low-Low* (n = 217.621), while the *Mid-Low/ Low-Mid* group (n = 130.600) contained approximately 35 fewer couples. This result may indicate that there is a selection pressure that encourages partners to pair with those more similar to themselves in their virtues and RAs. This finding was further supported by the reported levels of sexual satisfaction of the *Low-High/ High- Low* couples in the

concordance analysis. While the other couple combinations resulted in the expected descending pattern of mean sex satisfaction scores from the *High-High* profile combinations to *Low-Low*, those in the *Low-High/ High-Low* combinations had the lowest weighted mean sexual satisfaction scores (see Table 16). It may be that individuals with such disparate profiles hold different expectations of partner interactions that negatively affect their sexual quality. From the perspective of the strong relationality model, in these cases it may be that one partner uses an *I-Thou* way of being more frequently than their partner (as seen in their use of virtues and RAs) while the other may be missing the call or, worse yet, ignoring it, impacting their sexual quality. Unfortunately, the small number of participants that fell into this combination (n = 2.195) severely limits the ability to make inferences from these results. Future research may explore how differences in the use of virtues and RAs affect individual expectations, couple interactions, and sexual quality.

The correlation of sexual quality measures to those of virtues and RAs was predicted by the strong relationality model and by the philosophers Buber (1958) and Levinas (1969; 1996). As both Buber and Levinas indicated, responding to the *Call of the Other* or having an *I-Thou* way of being is how one can best connect to the needs and uniqueness of one's partner. This openness, acceptance, and communication with one's partner may lead to increased understanding of each partner's wants and needs both in terms of the day-to-day relationship, as expected by the strong relationality model, or during sexual intimacy. This is supported by the fact that increased sexual communication and increased comfort with sexual communication is correlated to increased sexual satisfaction (Fisher et al., 1988; Impett, Muise, & Brienes, 2013; Impett et al., 2008). It is also possible that this effect is not direct but comes instead from a more global *I-Thou* way of being across the whole relationship rather than in relational or sexual context specific ways. Further inquiry into the associations between virtues, RAs, sexual quality, and relationship quality could increase our

understanding of this interplay. In other words, it may be that more awareness of and response to one's partner's needs may result in increased perceptions of sexual quality.

The evidence from these two studies supports previous work, as these results mirror those found in research on sexual communal strength (Muise, Impett, Kogan, & Desmarais, 2013; Muise & Impett, 2015) as well as results by Young and Curan (2016), which indicated that being relationally focused—whether that be through giving without expectation or expressing appreciation—resulted in increased reports of relationship satisfaction and sexual satisfaction. As relationship quality has been linked to sexual quality, this research also provides support for the strong relationality model (Galovan & Schramm, 2018), as the strong relationality model predicts that increases to virtues and RAs results in positive changes in relationship quality. Indeed, these results are in line with Buber (1958) and Levinas' (1969; 1996) perspectives, as the increased focus on the other should lead to a better understanding and appreciation for the partner as a whole person and the motivation to meet their needs (as demonstrated by the increased use of virtues and responsible actions).

Exhibiting behavior with one's partner consistent with an *I-Thou* way of being, along with the empirical association found between increased virtue use and sexual quality, leads to another conclusion: Meaning making, not only satisfaction, is important for a couple's sexual quality. Consistent with the strong relationality model, couples' sexual quality may be highest when both partners find meaning through *I-Thou* connection evidenced by not only sexual satisfaction but sexual responsible actions (Galovan et al., 2021). This finding further underlines the importance of utilizing measures of sexual quality beyond assessments of sexual satisfaction.

Of interest within the result of this study are the correlations between sexual satisfaction and sexual flourishing. As seen in Table 8, Sexual satisfaction and Sexual flourishing are correlated at 0.686 ($p < .001$) in the *Low* group, increasing to 0.779 ($p < .001$)

in the *Mid* group, and increasing again in the *High* group to 0.855 ($p < .001$). Above I argued for the use of both sexual satisfaction and sexual flourishing in the evaluation of sexual relationships to account for both factors of meaning and pleasure. Interestingly, as these sexual quality measures increased in their factor-score intercepts the differences between the measures decreased. I speculate that the differences between these measures are more salient to those in the lower profiles as positive and negative aspects of each will have differing effects on a person's perception of their sexual well-being. Those in higher profile, meanwhile, may have a more positive overall perception of their sexual relationship and may have a harder time differentiating between different aspects of their sexual quality.

Another interesting result was that of pride, which consisted of the negatively worded humility items and was most easily conceptualized as a 'vice' due to item wording. In both Study 1 and 2, pride was the only variable for which a downward trend was observed in the LPA, as all other variables trended upwards in the profile analysis. Pride did not significantly correlate with the majority of the virtues and RAs across profiles in both studies, and it was most likely to be negatively correlated when correlations did reach significance. Sexual well-being appears to hold an inverse relationship with pride, in contrast to the virtues and RAs. However, as the measures were not generally correlated, this is simply a comparison of profile trends. Though this is not a substantial comparison of virtues and 'vices,' these results indicate that virtues, RAs, and vices may only hold a tangential relationship statistically even though conceptually they are often thought of as opposing ends of the same scale (Fowers, Richardson, & Slife, 2017). The consistent use of a vice may be considered to represent an overuse or negative use of the *I-It* way of being, as it is unlikely to be used in the normal day-to-day interactions described by Buber (1958), nor in the interest of the relationship or partner in the same way that virtues promote an *I-Thou* way of being (Galovan & Schramm, 2018). Further research into the relationship between virtue, vices, and sexual well-being is

required to properly establish how these concepts relate and how they can affect our understanding of relationships within a strong relationality paradigm.

Though this work is still in its infancy, latent profiles of virtues and RAs can be useful in application as well as theory. One possible application is categorizing participants for interventions. For example, those couples seeking sexual therapy that are assessed as falling into the *Low* profile or who have highly disparate virtue profiles could be targeted to receive more intensive interventions than those in higher profiles. Additionally, profiles such as these may be used as another tool to evaluate points of friction or conflict in the relationship that need be addressed. If expectations around the use of virtues and RAs in the relationship, sexual or otherwise, are not consistent between partners, conflicts or resentment may result. By using profiles like those listed above, practitioners can have a rough estimation of where each partner falls in their *I-Thou* interactions with their partner and could use this as a starting point to discuss possible mismatches in expectations and actions.

This study is not without limitations and there are many possible future directions for the study of virtues, RAs, and sexual quality. First, the data for both studies is cross-sectional. Without long-term data collection directionality of these effects cannot be determined and, while not theoretically supported, it is statistically possible that it is the level of sexual quality that determines the use of virtues and responsible actions. Next, many of the measures used in Study 1 and Study 2 were created specifically for these sets of data collection. To ensure that these measures accurately represent virtues, responsible actions, and flourishing further validation is required. Other issues of measurement, in addition to validation, can be seen in the ceiling effect suffered by multiple measures in these studies. This ceiling effect led to a lack of distinction between participants and may have affected profile creation as well as the associations drawn between variables. Future researchers may wish to perform a qualitative analysis of virtues and responsible actions to better understand and define virtues as those in

their sample populations do, as well as to discover any possible distinctions people may make between virtues and responsible actions across contexts, including relational and sexual.

The above studies provided initial evidence of a three-profile model for naturally occurring groups of virtues and responsible actions replicated in two samples with different reporters. When applied to the same model directional structure as the virtues and responsible actions, measures of sexual well-being followed the same trend as the *Low*, *Mid* and *High* profiles, providing evidence that increased virtues and responsible actions are correlated to increases in measures of sexual quality.

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