



Clarifying Anticipated Feelings of Jealousy: Development and Validation of the Anticipated Jealousy Scale

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Abstract

This study examined the construct of anticipated jealousy, conceptually clarifying the components of this construct and creating an optimized scale. Total of 18 items from three widely used self-report measures of jealousy (Multidimensional Jealousy Scale–Emotional Subscale, Anticipated Sexual Jealousy Scale, and Chronic Jealousy Scale) and additional 11 potential anticipated jealousy items were given to 1852 individuals in relationships. Exploratory and confirmatory factor analyses and item response theory (IRT) analyses were used to develop and evaluate the Anticipated Jealousy Scale (AJS). By augmenting the item pool, the results highlighted that anticipated jealousy could take two distinct forms: (1) sexual—getting upset over thoughts of a partner engaging in sexual activity with someone else and (2) possessive—getting upset over a partner forming friendships and emotional bonds with others. IRT analyses helped identify the five most effective items for assessing each of those domains to create the AJS. Results suggested that the subscales of the AJS offered greater precision and power in detecting meaningful differences among respondents than the existing measures, representing short yet psychometrically optimized scales. The AJS subscales demonstrated strong convergent validity with other measures of anticipated sexual and possessive jealousy, and excellent construct and discriminant validity with anchor scales from the nomological net surrounding the construct. Finally, regression analyses demonstrated distinct predictors and correlates for anticipated sexual jealousy, anticipated possessive jealousy, and chronic jealousy. Given the potential utility in distinguishing between the many forms of jealousy, AJS offers an optimized scale measuring anticipated sexual and possessive jealousy.

Keywords Jealousy · Relationship satisfaction · Dedication · Trust · Attachment · Dark Triad

Introduction

As a majority of romantic relationships in the USA embrace a traditional monogamous commitment structure (Haupt et al., 2016), attractive alternative partners can represent a threat to relationships to the degree that they introduce the possibility of emotional or sexual entanglements outside of the relationship (Fincham & May, 2017). Such threats can naturally trigger feelings of possessiveness and jealousy, alongside cognitive and behavioral responses to attenuate the threat and protect the relationship (Buunk & Dijkstra, 2006; Gagné & Lydon, 2004). In some contexts, jealousy could represent an adaptive reaction to relationship threats, encouraging partners to engage

in greater relationship maintenance behaviors (i.e., providing support, showing affection; e.g., Buss, 1988; Buss & Shackelford, 1997). However, dispositional or chronic levels of jealousy (e.g., White, 1981, 1984) and a possessive jealous drive to limit even a romantic partner's superficial contact with other individuals (i.e., possessive jealousy, see Barelds & Barelds-Dijkstra, 2007; Buunk, 1997) might highlight more maladaptive forms of jealousy that could serve to erode romantic relationships. The current study sought to extend previous work by creating an optimized self-report scale that conceptually clarifies the internal emotional experience of anticipated jealousy, providing a tool for researchers to model how those internal experiences might shape behavior and relationship dynamics.

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Conceptualizing Jealousy

Clarifying Current Focus

As reviewed by Bunnk and Dijkstra (2006), jealousy has been conceptualized as a multifaceted phenomenon (White & Mullen, 1989) including both dispositional traits (e.g., chronic jealousy; White, 1981, 1984) and state-level fluctuations in emotional, cognitive, and behavioral reactions. The current study focused on jealousy as an internal emotional process that might shape an individual's own behaviors (e.g., relationship maintenance, mate guarding) as well as romantic relationship dynamics (e.g., communication, conflict, support) and relationship investment (e.g., dedication, trust, attachment, communality, satisfaction). The study therefore focused on the emotional aspects of jealousy rather than cognitions or behaviors. Extending this, previous work has also drawn distinctions between anticipated jealousy (evoked by the thought of a partner's possible future behaviors) and fait accompli jealousy (evoked following actual betrayals or infidelities of a romantic partner; e.g., Parrott, 1991). As fait accompli jealousy represents a common and natural reaction to infidelity and betrayal (White & Mullen, 1989), it therefore emerges within a quagmire of deeper relationship problems that likely led to and/or resulted from the infidelity, confounding that individual process with the broader relationship dynamics. The current study therefore chose to focus on anticipated jealousy—individuals' anticipated emotional reactions (from very pleased to very upset/bothered) to their romantic partners engaging in various forms of bonding with others (e.g., working alongside, forming friendships, flirting, and engaging in emotionally and/or physically intimate relationships).

Evolving Terminology in the Literature

As research on jealousy has grown and evolved over the last 50 years, new and differing conceptualizations have emerged along with new and differing operationalizations or scales. This has not only led to somewhat conflicting conceptual definitions as well as occasional discrepancies between conceptual and operational definitions, but it has also led different sets of researchers to use differing terminology to refer to the constructs assessed by the same (sub)scales. In an effort to clarify the commonalities spanning previous work (and to align with the measure development focus of the current study), the following review focuses primarily on the actual scales used to assess jealousy as a foundation that has remained largely stable (i.e., focusing on the operational definitions rather than the diversity of conceptual definitions). The review then tracks track how the labels for those scales and subscales has grown and evolved over time. Thus, within this manuscript, the terms used to refer to forms of jealousy will be tied to the precise scales and items used to assess

them (using a consistent term for each scale based on its item content and structure alone). Given the conflicting conceptual definitions in this evolving literature as well as some notable examples of conceptual definitions diverging markedly from operational definitions within specific studies, the operationally grounded terms used in this manuscript do not always align with the terms used by the authors of previous studies.

Anticipated emotional responses to partners' behavior were originally referred to as anticipated sexual jealousy (or more simply, anticipated jealousy) when assessed with the Anticipated Sexual Jealousy Scale (ASJS; Buunk, 1982, 1998). However, more recently scores on that same scale or similar scales have also been referred to as reactive jealousy (e.g., Barelds & Barelds-Dijkstra, 2007; Buunk, 1997; Buunk & Dijkstra, 2006; Rydell & Bringle, 2007) to acknowledge the more volatile affective components of that emotional experience. In a similar manner, this form of anticipated jealousy has also been referred to as emotional jealousy when assessed with the Multidimensional Jealousy Scale using extremely similar items (MJS; Pfeiffer & Wong, 1989) in an effort to contrast it from suspicious cognitions and the suspicious, intrusive, and distrustful behaviors also assessed by that scale. In fact, some researchers (e.g., Rydell & Bringle, 2007) have collectively labeled the cognitive and behavioral subscales of the MJS as "suspicious" jealousy. In direct contradiction to this, other researchers (e.g., Parrott, 1991) have instead labeled anticipated/reactive jealousy as "suspicious" jealousy in an effort to capture the emotionally reactive nature of that construct. Given the shifting and sometimes conflicting terminology in the jealousy literature, the current study chose to use the original term of "anticipated" jealousy to represent the construct being examined as that terminology is most directly linked to how the construct is being assessed.

Expanding Anticipated Jealousy

Extending previous conceptualizations, the Revised Anticipated Sexual Jealousy Scale (R-ASJS; Buunk, 1997) introduces two newer dimensions: possessive/preventative jealousy (a disposition toward preventing a partner from even having superficial and innocuous contact with others) and anxious jealousy (preoccupation and worry over a partner's possible sexual infidelity and losing that partner to someone else—highly similar in content and focus to the suspicious cognitions assessed in the MJS). The possessive/preventative jealousy subscale of the R-ASJS aligns fairly strongly with the conceptual definition of emotional jealousy offered by Guerrero et al. (2004) as a form of discomfort arising from a partner forming an emotional attachment to another individual and aligns with the emotional experience focus of the current study. However, given the notable content and conceptual overlap between anxious jealousy ("I worry that my partner might leave me for someone else") and measures of attachment anxiety (e.g., Fraley et al., 2000; "When my partner is out of sight, I worry that he or she might become interested in someone

else”), that domain of jealousy fell outside of the current study’s focus. Thus, the study sought to build on the R-ASJS by examining the emotional component of possessive jealousy, specifically by assessing anticipated emotional reactions to a partner’s more innocuous interactions with strangers and friends.

Existing Jealousy Scales

Need for Improved Scales

A variety of jealousy measures were developed in the 1970s and 1980s (e.g., the Self-reported Jealousy and Projective Jealousy Scales; Bringle et al., 1977; the Interpersonal Jealousy Scale; Mathes & Severa, 1981; the Chronic Jealousy Scale; White, 1981, 1984). A serious limitation of many of these scales is that, given the prevailing cultural norms of those decades, many of those scales specifically referred to “opposite sex” individuals when presenting relationship threats, thereby creating scales that would only operate appropriately in heterosexual respondents. This is of particular concern, as the use of such language could act as a microaggression against sexual and gender minority individuals, serving to invalidate their inner truths and leaving them feeling excluded and unimportant. Thus, the current study sought to create a scale with more inclusive language. A second major concern with the previous scales is that they took widely varying approaches to conceptualizing and measuring this construct, with corresponding shifts and evolutions in the terminology used to refer to those constructs (as detailed above). As a result, when six prominent jealousy scales were directly compared in a sample of a hundred college students, those scales failed to demonstrate robust levels of convergent validity (Mathes et al., 1982), yielding correlations of only 0.32 to 0.46 with one another. In fact, some of the scales were more correlated with other constructs, such as neuroticism, dependency, or insecurity, than with other measures of jealousy, highlighting the discriminant validity among those scales rather than identifying robust convergent validity. This heterogeneity and lack of convergent validity was also replicated in a separate study of four self-reported jealousy measures (White, 1984). Thus, the lack of convergence among a diverse set of shifting conceptual definitions and terminology also translated into lower levels of convergence among the operational definitions in this work. The current study sought to address this heterogeneity by narrowing the conceptual focus to anticipated jealousy—a common conceptual thread running through a majority of this work that could be conceptually clarified and whose measurement could be psychometrically optimized. Thus, the current study examined anticipated jealousy, or individuals’ anticipated reactions to their partner engaging in specific behaviors with others. More specifically, the study sought to disentangle anticipated jealousy at the thought of a partner engaging in overt sexual acts with others (i.e., anticipated sexual jealousy) from anticipated

jealousy at the thought of a partner engaging in more superficial and innocuous interactions with strangers, acquaintances, and friends (termed anticipated possessive jealousy in the current manuscript to align with the corresponding ASJS-Revised subscale). Thus, the following subsections present three of the most widely used and cited scales assessing jealousy, two of which assess the focus of the current manuscript: anticipated jealousy.

The Multidimensional Jealousy Scale

One of the most widely used scales is the Multidimensional Jealousy Scale (MJS; Pfeiffer & Wong, 1989). Although the process of item selection was not published, the MJS was designed as a tridimensional scale, assessing cognitive, emotional, and behavioral aspects of jealousy. The current study focused primarily on the “emotional” subscale of the MJS (i.e., the MJS-E) as its items asked about both anticipated possessive jealousy (e.g., “How would you emotionally react—very pleased to very upset—to your partner working very closely with a member of the opposite sex”) and anticipated sexual jealousy (e.g., “How would you emotionally react—very pleased to very upset—to your partner hugging and kissing someone of the opposite sex”). It should be noted that naming this subscale “emotional jealousy” failed to align with more recent definitions of emotional jealousy as the subscale includes what would now be considered both sexual and emotional jealousy items by Guerrero and colleagues (2004). Thus, to align with the larger literature, the current study chose to avoid using the term “emotional” jealousy (given its varying definitions) and instead refer more specifically to anticipated sexual jealousy and anticipated possessive jealousy as those terms have more consistent meanings in the previous literature. A recent validation of the MJS revealed significant cross-loadings across the dimensions for a quarter of the scale’s items (Elphinston et al., 2011), suggesting that the three primary subscales might have a more complex factor structure.

The Anticipated Sexual Jealousy Scale

Developed and honed over the last 35 years, the 5-item Anticipated Sexual Jealousy Scale (ASJS; Buunk, 1982, 1998) specifically assesses anticipated emotional reactions to romantic partners engaging in range of sexualized behaviors with others (e.g., “How would you feel—extremely pleased to extremely bothered—if your partner were to engage in the following behavior with another man/woman... flirting, light petting, sexual intercourse”). Thus, rather than focusing on a general perceived threat to a relationship, the ASJS specifically emphasizes a romantic partner’s sexual attraction to another individual as the source of the aversive negative reaction. While the evidence for item selection or scale structure has not been published, the current version of the ASJS has demonstrated high-level internal consistency (e.g., Buunk, 1998).

The Chronic Jealousy Scale

A final commonly used jealousy scale is the 6-item Chronic Jealousy Scale (CJS; White, 1981, 1984). Taking a markedly different approach than the MJS and ASJS scales, the CJS conceptualizes jealousy as an individual trait. Thus, the items assess the degree to which individuals see themselves as jealous people, experience jealousy within romantic relationships, and are prone to jealous reactions (e.g., “Do you think of yourself as a person who can get jealous easily?”). In contrast to a majority of the other self-report scales of jealousy (which avoid using the term jealousy to avoid response biases arising from the stigma of that term), the CJS opted for maximum face validity by using the term “jealousy” in every item of the scale. Scores on the CJS correlate highly with other trait-like constructs like self-esteem (e.g., White, 1981) and attachment insecurities (e.g., Barnett et al., 1995). However, given its differing approach to assessing jealousy, the CJS demonstrated only moderate correlations with anticipated sexual jealousy ($r_{\text{females}} = 0.464$, $r_{\text{males}} = 0.687$), suggesting that it might be assessing a distinct construct (White, 1984).

Building on these Scales

The conceptual focus of the current study was aligned with the ASJS scale as well as the emotional jealousy subscale of the MJS, in that the items suggest possible partner behaviors and ask respondents to rate their anticipated emotional reactions on a “very pleased” to “very bothered” response scale. Thus, the items of the relevant MJS and ASJS subscales were consistent with our conceptual definition and were included in our item pool. Use of this response scale also offered the opportunity to use the resulting scale to assess compersion—a construct defined as a counterpoint to jealousy representing the experience of positive emotions in response to a partner experiencing sexual pleasure with another person (see Mogilski et al., 2019). As we sought to distinguish more normative sexual jealousy from intrusive and possessive forms of jealousy, we wrote additional items for the pool, assessing a broader range of behaviors. These items ranged from forming non-sexual friendships with others (e.g., “joking and laughing with them,” “regularly texting and calling him/her,” “forming a friendship with him/her”) to emotional bonding (e.g., “discussing personal things,” “forming a strong emotional bond with him/her,”) and more overt sexual behaviors (e.g., “making out with him/her,” “oral sex”).

Conceptual Boundaries

To clarify the limits of our conceptual definition, we conceptualized anticipated jealousy (both sexual and possessive) as distinct from relationship constructs like trust and dedication, constructs from the couples literature with distinct conceptual definitions, measures, and correlates (e.g., Larzelere & Huston, 1980; Stanley

& Markman, 1992). We also view anticipated jealousy as distinct from individual constructs like attachment anxiety and neuroticism. Given its markedly different approach to assessing jealousy, we conceptualized the construct of “chronic jealousy” assessed by the CJS as conceptually distinct from the two more specific dimensions of anticipated jealousy under investigation.

Correlates of Jealousy

Anticipated or reactive jealousy (as both terms have been used to refer to the construct assessed by the ASJS) has been cross-sectionally linked to many different adaptive relationship processes such as higher levels of commitment (Rydell et al., 2004), feelings of intimacy and love (Buunk, 1981), rewarding interactions with partners and relationship satisfaction (Barelds & Barelds-Dijkstra, 2007). Anticipated jealousy has also been shown to predict relationship stability and a successful transition to marriage over 7 years (Mathes, 1986), and shows elevations during the fertile periods of women’s menstrual cycles (Cobey et al., 2012). Thus, the experience and expression of jealousy in some situations may represent a normative process that signals to partners that the relationship is valued (see Buss, 1989). In contrast, possessive and chronic jealousy have been linked to psychological insecurity (e.g., Mathes & Severa, 1981), higher levels of attachment anxiety (Fraley & Shaver, 2016), emotional dependency (Buunk, 1982), and the dark triad (Barrelds et al., 2017). Within relationships, high levels of possessive jealousy have been linked to dysregulated behaviors like problematic drinking (e.g., DiBello et al., 2014, 2015). These preliminary findings begin to suggest that specific aspects of jealousy may therefore represent manifestations of a person’s underlying insecurities or desire to control a romantic partner rather than genuine signals of wishing to maintain the relationship. Jealousy need not be restricted to romantic relationships, as it has also been shown to be a salient factor in friendships and sibling relationships (e.g., Bevan & Hale, 2006). Thus, jealousy is a construct that spans all interpersonal relationships, and influences both individual behavior and the quality of those social interactions.

The Current Study

Despite a growing body of work demonstrating the importance of jealousy in individuals’ lives (see Martínez-León et al., 2017 for a review), existing measures of jealousy are limited by a number of considerable concerns. First, many of them use outdated language (e.g., referring to “opposite sex” individuals) that effectively rejects sexual and gender minorities in a microaggressive manner. Second, as many of these scales were developed in the 70s and 80s, the process of item selection was often not well detailed nor data-driven in any meaningful way. Thus, although the body of work using those scales has supported their validity, it remains unclear if the items being used are the most effective items for assessing those constructs, raising concerns about the

precision vs. noise of measurement offered by those scales. Third, as the constructs of “anticipated,” “reactive,” “emotional,” and “possessive” jealousy have been both defined and operationalized by different researchers in conflicting manners across studies and across scales, there currently remains some conceptual ambiguity surrounding these forms of jealousy—even when focusing specifically on anticipated emotional reactions to the possible actions of a romantic partner (i.e., within the realm of anticipated jealousy).

Thus, to build on previous work, the current study sought to develop and validate an optimized measure of anticipated jealousy. Given the differing patterns of results obtained for anticipated sexual jealousy (i.e., getting upset at a partner having sex with someone else) and possessive jealousy (i.e., getting upset at partners forming friendships or simply working closely with others), the current study sought to examine those as potentially distinct forms of anticipated jealousy. Toward that end, we used traditional, correlational measure development analyses (e.g., exploratory and confirmatory factor analyses, internal consistency analyses) in an online sample of 1,852 individuals in romantic relationships to identify meaningful dimensions of jealousy within a larger pool of 29 items (thereby clarifying conceptual discrepancies between previous scales and previous definitions). We then augmented those classic test theory analyses with Item Response Theory (IRT; Hambleton et al., 1991) analyses, allowing us to identify the 10 most effective items for assessing anticipated sexual and possessive jealousy (thereby offering greater precision and power—critical to studies with smaller samples like treatment studies), creating the Anticipated Jealousy Scale (AJS).

Subsequent validation analyses examined: (1) the stability of the factor structure of the AJS, (2) the internal consistency of the AJS subscales across demographic subgroups, (3) the quality of information provided by the AJS (i.e., precision and power for detecting subtle group differences), (4) the convergent validity of the AJS with existing anticipated jealousy scales, and (5) the discriminant validity of the AJS with anchor scales from the nomological net surrounding the construct of jealousy. Given research linking jealousy to background characteristics like desire for monogamy (e.g., Mogilski et al., 2019), attachment anxiety and avoidance (e.g., Rydell & Bringle, 2007; Sharpsteen & Kirkpatrick, 1997), and the dark triad (e.g., Chin et al., 2017; White, 1984), multiple regression analyses examined a set of background characteristics as predictors of the AJS anticipated sexual jealousy, AJS anticipated emotional jealousy, and the CJS chronic jealousy to explore the different patterns of associations underlying those distinct forms of jealousy. In addition, as forms of jealousy have been linked to relationship dynamics like negative conflict behavior (e.g., Guerrero, 2014), trust/distrust (e.g., Dainton & Aylor, 2001; Rydell & Bringle, 2007), and relationship satisfaction (e.g., Barelds & Barelds-Dijkstra, 2007; Dugosh, 2000), a final set of regressions examined the unique predictive validity (i.e., the incremental validity) of the

AJS subscales and the CJS in predicting relationship dynamics. Finally, as open relationship structures have been linked to lower levels of jealousy and higher levels of compersion (e.g., Hosking, 2014; Mogilski et al., 2019), we reproduced those results with the AJS to establish preliminary criterion validity.

Method

Participants

A majority of the 1852 individuals in the sample identified as female (58%) and Caucasian (80%), with 6% identifying as Black, 6% Asian, and 8% other/unknown. When separately asked about ethnicity, 9% reported identifying as Hispanic or Latinx. The average age was 33.7 years old with an average income of \$63,105 ($SD = \$32,687$), and with 23% having completed graduate degrees, 34% bachelor's degrees, 33% some college or associate degrees, and 10% high school degrees or less. Participants were predominantly heterosexual (71%), with 14% heteroflexible (identifying as completely or mostly heterosexual but reporting fairly high levels of attraction to same-sex individuals), 9% bisexual, 5% homosexual, and 1% asexual (identified using the Multidimensional Sexual Orientation Classification System; [MSOCS]; Legate & Rogge, 2019). All participants were in romantic relationships and had been together for an average of 7.2 years ($SD = 9.1$), with 44% in committed relationships, 41% engaged or married, and 15% dating casually (i.e., dating more than one person, but still identifying a primary relationship). A majority of the sample was monogamous (72%), with 13% at least partially open to extradyadic sexual activity (EDSA), 10% reporting open, consensual non-monogamous relationships, and 5% reporting relationship structures in which only one partner is engaging in EDSA (using the COMMIT-4; Hangen et al., 2020; see below). Roughly 57% of respondents were living with their romantic partners, with 36% living separately from their romantic partner, and 8% living in a long-distance relationship.

Procedure

All participants were required to be at least 18 years old, and currently in a romantic relationship. The survey was presented online via SurveyGizmo.com, took an approximate 30–35 min to complete, and was advertised as “The Finding Pleasure in Sex Study.” Informed consent was obtained by providing a consent form as the first webpage of the survey and having respondents answer a question to indicate that they had read the consent and were comfortable continuing. To increase diversity within the sample, participants were recruited via a number of methods: ResearchMatch (47%), Amazon.com's Mechanical Turk (31%), other online sources (12%; e.g., Facebook, Reddit, Craig's List, University of Hanover, emails to listservs), a psychology undergraduate

subject pool (9%), and via emails (1%). These efforts yielded a sample of 1852 individuals currently in relationships. All participants received an incentive in the form of individualized feedback at the end of the survey. Respondents participating through MechanicalTurk also received an incentive of \$0.50 of store credit for Amazon.com, and participants from the undergraduate research subject pool were also given 0.5 unit (1 per hour of participation) of extra credit to be applied toward their psychology courses.

Jealousy Measures

Multidimensional Jealousy Scale–Emotional Jealousy Subscale (MJS-E)

The MJS-E (Pfeiffer & Wong, 1989) is a 7-item subscale of emotional jealousy that assesses emotional reactions to various situations (as in Elphinston et al., 2011). To avoid the heteronormative bias of referring to “members of the opposite sex” as the potential threats to the relationship, the stem was changed to read, “How would you feel if your partner were to engage in the following behavior with a very attractive person?” The specific items of this subscale included those with clear sexual threats (e.g., “dating him/her,” “flirting with him/her,” “kissing and hugging him/her”) as well as items portraying what could simply be a partner emotionally bonding with that person (e.g., “showing a great deal of interest or excitement in talking to him/her,” “(Your partner) working very closely with that attractive person (in school or the office)”). The items were rated on a 7-point scale (“*Very pleased*” to “*Very bothered*”). Responses were averaged so that higher scores indicated higher levels of emotional jealousy ($\alpha = 0.95$).

Anticipated Sexual Jealousy Scale (ASJS)

The ASJS (Buunk, 1982, 1998) is a 5-item scale of anticipated sexual jealousy that asks respondents to rate their likely emotional reactions to their partner exhibiting specific behaviors toward a third person. In the current study, the items (“flirting with him/her,” “sexual intercourse,” “light petting,” “having a long-term sexual relationship,” “falling in love”) were presented with the following stem, “How would you feel if your partner were to engage in the following behavior with a very attractive person?.” The items were rated on a 7-point scale (“*Very pleased*” to “*Very bothered*”). Responses to these items were averaged so that higher scores indicated higher levels of sexual jealousy ($\alpha = 0.95$).

Chronic Jealousy Scale (CJS)

The CJS (White, 1984) is a 6-item scale of global jealousy (e.g., “How jealous a person are you generally?,” “How often do you experience jealousy in your romantic relationships?,”

“How much have your jealous feelings been a problem in your romantic relationships?”). The items were rated on a 7-point scale (“*Not at all*” to “*Extremely*”). Responses to these items were averaged so that higher scores indicated higher levels of global jealousy ($\alpha = 0.92$).

Additional Jealousy Items

To diversify the pool of items from the content of existing scales, the authors created additional 11 items measuring sexual and possessive jealousy. The items all included a single stem question (“How would you feel if your partner were to engage in the following behavior with a very attractive person?”). The items were kept reasonably short and using an 8th grade reading level to minimize respondent burden and maximize comprehension. The items assessed for a variety of behaviors, following the context of the existing scales (e.g., “Exchanging phone numbers with that person,” “Spending time with that person without you,” “Regularly texting and calling him/her,” “Forming a strong emotional bond with him/her”).

Background Measures

Sex Positivity and Negativity

Respondents completed the 16-item Sex Positivity and Negativity scale (SPN; Hangen & Rogge, 2021), with 8 items assessing sex positivity (“In general, I feel that sex and sexuality are... fun, pleasant, invigorating, positive”) and 8 items assessing sex negativity (“In general, I feel that sex and sexuality are... miserable, unpleasant, negative, upsetting”). The items were rated on a 6-point scale (“*Not at all*” to “*Extremely*”), and responses were averaged for each subscale so that higher scores indicated higher levels of sex positivity and negativity ($\alpha_{\text{positivity}} = 0.91$; $\alpha_{\text{negativity}} = 0.95$).

Desire for Monogamy

Respondents were asked to rate their desire for monogamy (“How much do you desire a monogamous relationship?”) on a 6-point scale (“*Not at all*” to “*Extremely*”).

Embracing Casual Sex

Respondents completed the 9-item Sociosexual Orientation Inventory-Revised scale (SOI-R; Penke, 2011) assessing attitudes embracing casual sex (e.g., “Sex without love is okay,”). The items were rated on a 9-point scale (e.g., “*Completely disagree*” to “*Completely agree*,” “*Never*” to “*At least once a day*”). Responses to these items were averaged so that higher scores indicated higher levels of positive attitudes towards, desire for, and experience with casual sex ($\alpha = 0.85$).

Recent Extradysadic Sexual Activity

Respondents were asked to report on their recent extradysadic sexual activity (EDSA; “With how many individuals (other than your partner) have you had sexual activity in the last 6 months?”). Respondents were allowed to separately enter the number of “men,” “women,” and “non-binary, gender fluid, or other” individuals they engaged in EDSA in with.

Sexual Orientation

Respondents completed the two items of the MSOCS (Legate & Rogge, 2019) to assess sexual orientation. These included the original Kinsey scale (“Please rate your sexual orientation on the following scale...” with the options: “Exclusively heterosexual,” “Predominantly heterosexual, only incidentally homosexual,” “Predominantly heterosexual, but more than incidentally homosexual,” “Equally heterosexual and homosexual,” “Predominantly homosexual, but more than incidentally heterosexual,” “Predominantly homosexual, only incidentally heterosexual,” “Exclusively homosexual,” “Asexual—No sociosexual contacts or reactions”) and an item assessing sexual attraction to same-sex individuals (“How much are you sexually attracted to (insert their own gender identity)” given on a 6-point scale “Not at all” to “Extremely”). Non-heterosexual identification. Responses to the Kinsey scale (other than the 1% identifying as asexual) were converted into a continuous variable on which higher scores reflected an increasingly non-heterosexual identification (see Table 4). Sexual orientation groups. After classifying asexual individuals as a separate group (representing 1% of the sample), we used responses on both questions with the MSOCS algorithm to classify respondents into 4 fundamental sexual orientation groups (as identified by the latent profile analyses used to develop the MSOCS; see Legate & Rogge, 2019): heterosexual (71%), heteroflexible (14%; identifying as completely or mostly heterosexual but reporting fairly high levels of attraction to same-sex individuals), bisexual (9%), and homosexual (5%; see orientation groups in Table 2).

Sexual Sensation Seeking

Respondents completed the 9-item Sexual Sensation Seeking scale (SSS; Kalichman et al., 1994) assessing global sexual sensation seeking tendencies (e.g., “I am interested in trying out new sexual experiences”). The items were rated on a 6-point scale (“Not at all like me” to “Extremely like me”). Responses to these items were averaged so that higher scores indicated higher levels of sexual sensation seeking ($\alpha = 0.86$).

Machiavellianism, Narcissism, and Psychopathy

Respondents completed the 27-item Short Dark Triad scale (SD3; Jones & Paulhus, 2014), with 9 items measuring Machiavellianism (e.g., “Most people can be easily manipulated”), 9 items assessing narcissism (e.g., “Many group activities tend to be dull without me”), and 9 items assessing psychopathy (e.g., “Payback needs to be quick and nasty”). The items were rated on a 6-point scale (e.g., “Strongly disagree” to “Strongly agree”). Items were averaged so that higher scores indicated higher levels of socially aversive traits ($\alpha_{\text{Machiavellianism}} = 0.80$; $\alpha_{\text{narcissism}} = 0.72$; $\alpha_{\text{psychopathy}} = 0.75$).

Attachment

Respondents completed 12 items of the Experiences in Close Relationships-Revised scale (ECR-R; Fraley et al., 2000), with 6 most informative items assessing attachment anxiety (e.g., “I often worry that my partner doesn’t really love me,”) and the 6 most informative items assessing attachment avoidance (e.g., “I don’t feel comfortable opening up to romantic partners”). The items all included a single stem question (“When I am in romantic relationships...”), and were rated on a 6-point scale (“Strongly disagree” to “Strongly agree”). Responses were averaged so that higher scores indicated higher levels of attachment anxiety and avoidance ($\alpha_{\text{attachment anxiety}} = 0.92$; $\alpha_{\text{attachment avoidance}} = 0.84$).

Relationship Measures

Relationship Commitment Structure

Respondents completed the four items of the COMMIT-4 (developed to classify relationships within a set of fundamental relationship structures identified by latent profile analysis in a large and diverse online sample; Hangen et al., 2020) to characterize the nature of their relationship structures. Grounded within the Triple-C model, these items not only distinguish monogamous from non-monogamous relationships, but also assess the levels of mutual comfort, consent, and communication surrounding commitment structures. Responses on the COMMIT-4 allow individuals to be placed into one of five fundamental types of relationship structures. Although the classes of the COMMIT-4 typically distinguish long-term monogamous relationships from more recently formed monogamous relationships, we combined those two classes in the current analyses to form a single monogamous group.

Dedication

Respondents completed four internally consistent items of the Commitment Inventory–Dedication Commitment Subscale (CI-DC; Stanley & Markman, 1992), assessing relationship dedication (e.g., “My relationship with my partner is more important to me than almost anything in my life,” “I want this relationship to stay strong no matter what rough times we encounter,” “My relationship with my partner is clearly part of my future life plans”). The items were rated on a 6-point scale (“*Strongly disagree*” to “*Strongly agree*”). Responses to these items were averaged so that higher scores indicated higher relationship dedication ($\alpha = 0.88$).

Negative Conflict Behavior

Respondents completed the 6-item Aversive Interaction Scale (AIS; Rodrigues & Rogge, 2007) assessing negative conflict behavior (e.g., “Yell or scream at your partner,” “Swear at your partner,” “Purposefully insult your partner,” “Mock your partner”). The items all included a single stem question (“When discussing a problem, how often do you...?”), were rated on a 6-point scale (“*Never*” to “*All of the time*”), and were averaged so that higher scores indicated higher levels of negative conflict behavior ($\alpha = 0.88$).

Distrust

Respondents completed the three negatively worded items (e.g., “There are times when my partner cannot be trusted,”) of the Dyadic Trust Scale (DTS; Larzelere & Huston, 1980). The items all included a single stem question (“In general...”), and were rated on a 6-point scale (“*Never*” to “*All of the time*”). Responses were averaged to create a distrust composite on which higher scores reflected greater distrust ($\alpha = 0.80$).

Relationship Satisfaction

The CSI-8 (Funk & Rogge, 2007) is an 8-item scale of relationship satisfaction (e.g., “I had a warm and comfortable relationship with my partner”). The items included a single stem question (“Thinking of the last month...”), and were rated on 6 and 7-point scales (e.g., “*Not at all*” to “*Completely*”). Responses to these items were averaged so that higher scores indicated higher levels of relationship satisfaction ($\alpha = 0.96$).

Average Frequency of Sexual Activity

Respondents completed six items measuring the frequency of sexual activity. The items were presented with a common stem (“Thinking of a recent, representative month, on how many days did you do each of the following with

your partner?”), and assessed six common sexual behaviors (“receive oral sex,” “provide oral sex,” “have penis-in-vagina intercourse with clitoral stimulation,” “have penis-in-vagina intercourse without clitoral stimulation,” “have penis-in-anus intercourse,” “manual stimulation by partner”). Respondents were allowed to enter the number of days (from 0 to 31) on which they engaged in each behavior. Individuals reporting no sexual activity whatsoever in the last month were given zeros on this scale and responses on items indicating at least some activity within the last month (i.e., all responses indicating 1 or more days) were averaged so that higher scores indicated higher average frequencies of sexual activity ($\alpha = 0.914$). This strategy was used so that non-engagement in physically impossible acts in same-sex couples would not affect their scores.

Perceived Partner Responsiveness

Respondents completed the 8-item Perceived Partner Responsiveness scale (PPR; Reis et al., 2017) assessing perceived partner responsiveness (e.g., “My partner seemed interested in what I was thinking and feeling”). The items included a single stem question (“In the last month...”) and were rated on a 6-point scale (“*Not at all*” to “*Completely*”). Responses to these items were averaged so that higher scores indicated higher levels of perceived partner responsiveness ($\alpha = 0.97$).

Partner Physical Attractiveness

Respondents were asked to rate their partner’s physical attractiveness (“How physically attractive is your partner?”) on a 6-point scale (“*Not at all*” to “*Extremely*”).

Results

Creating the Anticipated Jealousy Scale (AJS)

Identifying Item Sets

To identify sets of unidimensional items (i.e., items assessing a single, common construct) to submit to IRT, an exploratory factor analysis (EFA) using principle axis factor with oblimin rotation (allowing the factors to correlate) was conducted on the 23 items in the item pool (including the items of the MJS emotional jealousy subscale and the ASJS scale) and the 6 items of the CJS (to enforce that conceptual boundary of chronic jealousy by extracting it as a separate factor) within the full sample. Both the scree plot and the Kaiser–Guttman criteria suggested a 3-factor solution, accounting for 76% of the variance and identifying: (1) a set of 9 anticipated sexual jealousy items, (2) a separate set of 11 anticipated possessive jealousy items (reporting distress at a partner having innocuous contact with others), and (3) the 6

items of the CJS as a distinct factor representing chronic jealousy (successfully ensuring that the items being considered for the new measure were not more directly assessing chronic jealousy). Unexpectedly, the items of the MJS emotional jealousy subscale were evenly split between these two factors (and were therefore split between the two item pools). This suggested that in the context of a larger item pool containing multiple items representing both types of anticipated jealousy (and therefore making it easier for EFA to reliably extract those two factors), a two-dimensional structure emerged for that subscale. The remaining analyses will therefore treat those two subsets of MJS emotional jealousy items as distinct subscales.

Selecting Items

Item Response Theory (Hambleton et al., 1991) analyses using the Graded Response Model (appropriate for items given on Likert scales; Samejima, 1997) were conducted using Multilog 7.0 (Thissen et al., 2002). IRT is a large sample technique that generates information profiles for each item (termed item information curves), identifying the amount of information offered by each item across a wide range of the underlying construct (3 SDs below the mean to 3 SDs above the mean). Thus, IRT can be used to augment traditional correlational measurement analyses (e.g., factor analyses, item-to-total correlations, Cronbach's alphas) by identifying the items offering the highest amount of information across the broadest range of the underlying construct, thereby creating psychometrically optimized scales that can offer maximal amounts of information for distinguishing participants using the smallest number of items. Thus, to identify the items of the AJS, separate IRT analyses were conducted on the sets of sexual and possessive jealousy items. The 5 items offering the highest levels of information across the broadest range of each dimension were selected to make the final scale.

Correlational Structure of the Anticipated Jealousy Scale

Factor Structure

To evaluate the stability of the two-dimensional factor structure of the AJS, exploratory factor analyses (EFAs) and confirmatory factor analyses (CFAs) focused exclusively on the items of the ASJ were performed in separate random halves of the sample. Thus, an EFA was conducted on the final 10 items of the AJS using principle axis factoring with direct Oblimin rotation (thereby allowing the factors to correlate) in a subsample of 924 participants (using SPSS 23.0). Both the scree plot and the Kaiser–Guttman criteria clearly supported a 2-factor solution which accounted for 86.6% of the variance (eigenvalue₁ = 7.23, eigenvalue₂ = 1.42, eigenvalue₃ = 0.48). As shown in Table 1,

the items of the AJS loaded cleanly on two distinct factors, supporting the 2-subscale structure. A separate CFA was run on the 10-items of the AJS in the remaining 928 respondents. The CFA was conducted using FIML estimation in Mplus 7.2, and a 2-factor model demonstrated adequate fit: $\chi^2(32) = 186.97$, $p < 0.001$; CFI = 0.980; SRMR = 0.032; RMSEA = 0.072, 95%CI LL = 0.062, UL = 0.083. In contrast, a CFA model specifying a single dimension demonstrated poor fit: $\chi^2(33) = 1,110.47$, $p < 0.001$; CFI = 0.859; SRMR = 0.140; RMSEA = 0.188, 95%CI LL = 0.178, UL = 0.197. As shown in Table 1, the path coefficients from the 2-factor model continue to support the 2-subscale structure of the AJS, as all items demonstrated reasonable loadings on their respective factors.

Internal Consistency of the Anticipated Jealousy Scale Subscales

As shown in the final columns of Table 2, responses on the items of the subscales of the AJS demonstrated high levels of internal consistency across the 30 demographic subgroups examined, with Cronbach's alpha coefficients ranging from 0.90 to 0.99. This would suggest that the IRT analyses were effective in helping to identify items that would operate optimally in the broadest possible range of future samples, demonstrating specifically that the AJS subscales will continue to function well, even when used within highly specific populations in future studies.

Measurement Invariance of the Anticipated Jealousy Scale

To extend the generalizability of internal consistency findings, we ran a series of nested models in the full sample (following standard practices; e.g., van de Schoot et al., 2012) to examine the measurement invariance of the AJS. As shown in the Model 1 rows of Table 3, the multigroup models testing configural invariance across gender identities (men vs. women), sexual orientation (heterosexual vs. other), race (white vs. other), cohabitation status (cohabiting vs. living separately), and marital status (dating vs. engaged or married) all demonstrated excellent fit. Thus, the AJS demonstrated weak factorial invariance across those groups, suggesting that its basic factor structure was consistent across them. As given in the final two columns of Table 3, as increasing numbers of constraints were added to Models 2–4 in each block of analyses, the CFI and RMSEA fit indices demonstrated only modest increases for a majority of analyses, falling within acceptable levels of change (see Chen, 2007). This suggested that the AJS demonstrated metric invariance (i.e., strong factorial invariance) and scalar invariance, allowing scores to be compared across these groups. Finally, the AJS demonstrated full uniqueness (i.e., stringent) invariance across sexual orientation, race, and cohabitation groups, suggesting that the AJS measures anticipated sexual and possessive jealousy essentially identically across those groups.

Table 1 Results of exploratory and confirmatory factor analyses conducted in random halves of the sample

Factor	EFA pattern loadings		CFA standardized path coefficients	
	Factor 1	Factor 2	<i>b</i>	SE
Item text: "How would you feel if your partner were to engage in the following behavior with a very attractive person?"	<i>n</i> = 924		<i>n</i> = 928	
Factor 1: Anticipated Sexual Jealousy				
Making out with him/her	.996	-.014	.989	.002
Kissing him/her	.918	.072	.954	.003
Sexual intercourse	.980	-.037	.956	.003
Light petting	.900	.052	.934	.005
Dating him/her	.945	-.018	.895	.009
Factor 2: Anticipated Possessive Jealousy				
Regularly texting and calling him/her	.135	.814	.949	.007
Spending time with that person without you	.156	.792	.927	.009
Exchanging phone numbers with that person	-.040	.916	.839	.015
Showing a great deal of interest or excitement in talking to him/her	-.019	.846	.786	.018
Joking and laughing with them	-.071	.828	.597	.027
Eigenvalues (unrotated) from the EFA	First	Second	Third	
	7.231	1.424	.479	

The items were rated on a (-3) "Very bothered" to (+3) "Very pleased" response scale. The EFA was conducted using principle axis factoring extraction with oblimin rotation (to allow factors to correlate). Both the scree plot and the Kaiser–Guttman criteria suggested a 2-factor solution, with a third eigenvalue of 0.479. Pattern coefficients represent semi-partial correlations between each item and the unique part of each factor (controlling for its overlap with the other factor). The CFA was conducted using FIML estimation in Mplus 7.2, and the 2-factor model presented demonstrated adequate fit: $\chi^2(32) = 186.97$, $p < .001$; CFI = .980; SRMR = .032; RMSEA = .072, 95%CI LL = .062, UL = .083. In contrast, a CFA model specifying a single dimension demonstrated poor fit: $\chi^2(33) = 1,110.47$, $p < .001$; CFI = .859; SRMR = .140; RMSEA = .188, 95%CI LL = .178, UL = .197

Although the AJS demonstrated scalar invariance across marital status and gender identity groups, it failed to demonstrate full uniqueness invariance across those groups. However, as shown in the "4 mod" rows of Table 3, allowing the error variance of just one item (light petting) to vary across marital status groups and the error variance of two items (sexual intercourse; dating him/her) to vary across gender was sufficient to achieve partial uniqueness (i.e., stringent) invariance across those groups. This suggests that although one or two items might be slightly more or less precise across men and women and across married vs. dating individuals, scores on the AJS are reasonably equivalent across gender and marital status, supporting direct comparisons across these groups (see van de Schoot et al., 2012 for guidelines to test and interpret partial measurement invariance).

Validity of the Anticipated Jealousy Scale

Convergent and Discriminant Validity with Existing Scales

As shown in the correlations in the top half of Table 4, scores on the AJS sexual jealousy subscale demonstrated excellent convergent correlations with scores on Buunk's ASJS ($r_{\text{women}} = 0.98$; $r_{\text{men}} = 0.98$) and with scores on the sexual

jealousy items on the MJS emotional subscale ($r_{\text{women}} = 0.93$; $r_{\text{men}} = 0.95$). This would suggest that these three scales are measuring a common construct, as their scores share over 80% of their variance with one another. In contrast, scores on the ASJS sexual jealousy subscale correlated more moderately with scores on the AJS possessive subscale ($r_{\text{women}} = 0.66$; $r_{\text{men}} = 0.66$) and scores on the MJS items assessing possessive jealousy ($r_{\text{women}} = 0.62$; $r_{\text{men}} = 0.61$), demonstrating discriminant validity. These results are consistent with the EFA and CFA findings, suggesting that the AJS possessive subscale assesses a distinct construct from the AJS sexual subscale. Similarly, scores on the anticipated jealousy measures (i.e., the AJS, the ASJS, and the MJS) also demonstrated fairly low correlations (ranging from 0.11 to 0.49) with chronic jealousy scores, suggesting that chronic jealousy represents a distinct conceptual construct from anticipated sexual and possessive jealousy.

Discriminant Validity with Distinct Constructs

As shown in the correlations in the bottom half of Table 4, scores on the anticipated and chronic jealousy scales demonstrated appropriately moderate correlations with scores

Table 2 Generalizability of Cronbach's alpha internal consistency coefficients across demographic subgroups

Demographic grouping variable	Subsample <i>N</i>	Multidimensional Jealousy Scale—Emotional subscale			Buunk ASJS (1998)	Anticipated Jealousy Scale (new)		
		Sexual items	Pos- sessive items	Entire subscale		Sexual sub- scale	Pos- sessive subscale	Com- posite Jealousy
Age								
18–25 years old	593	.92	.89	.91	.95	.98	.93	.94
26–35 years old	627	.93	.85	.91	.96	.98	.92	.95
36–78 years old	628	.92	.92	.94	.95	.98	.93	.96
Race								
White	1487	.92	.89	.92	.95	.98	.93	.95
Black	108	.97	.90	.93	.97	.98	.91	.96
Asian/Pacific Islander	112	.94	.88	.92	.95	.97	.87	.94
Other/biracial/unknown	145	.88	.82	.88	.95	.98	.92	.94
Hispanic/Latino								
Non-Hispanic	1689	.93	.89	.92	.95	.98	.93	.95
Hispanic/Latino	163	.91	.87	.91	.96	.99	.89	.94
Gender identity								
Men	736	.91	.88	.91	.95	.98	.92	.95
Women	1987	.94	.88	.92	.95	.98	.93	.95
Non-binary/fluid/other	29	.97	.92	.92	.95	.99	.95	.96
Sexual orientation (MSOCS)								
Heterosexual	1313	.92	.87	.91	.94	.98	.91	.94
Heteroflexible	268	.92	.87	.91	.96	.98	.93	.95
Bisexual	161	.95	.91	.94	.96	.99	.96	.97
Homosexual (gay or lesbian)	89	.94	.92	.94	.97	.99	.94	.96
Education level								
HS or less	181	.86	.89	.90	.96	.98	.91	.93
Some college/associates degree	610	.93	.90	.93	.95	.98	.94	.96
Bachelor's degree	636	.93	.86	.91	.95	.98	.92	.95
Graduate degree	429	.94	.87	.90	.95	.98	.92	.93
Relationship structure								
Monogamous	1328	.87	.86	.88	.93	.97	.90	.92
Consensual non-monogamous—open	175	.95	.92	.95	.95	.98	.96	.97
Non-monogamous—partially open	233	.93	.87	.92	.96	.98	.93	.96
Non-monogamous—one sided	99	.95	.95	.95	.95	.98	.95	.97
Relationship stage								
Dating	275	.93	.91	.93	.95	.98	.92	.96
Committed relationship	822	.92	.87	.90	.94	.98	.93	.94
Engaged/married	755	.92	.89	.92	.95	.98	.93	.96
Living arrangements								
Living together	1042	.93	.88	.92	.95	.98	.92	.95
Living separately	655	.92	.87	.91	.96	.98	.92	.94
Long-distance relationship	142	.93	.93	.94	.94	.97	.96	.97

The table presents unstandardized Cronbach's alpha coefficients in the current sample. MSOCS = Multidimensional Sexual Orientation Classification System (Legate & Rogge, 2019). Relationship structure and relationship stage were assessed with single items

Table 3 Measurement invariance across demographic groups

Groups examined							Change from prior model	
Model No.	Model description	df	χ^2	CFI	TLI	RMSEA	DRMSEA	DCFI
Testing MI across gender identities [men vs. women]								
1	Configural [weak factorial] invariance	66	282.3	.989	.986	.060		
2	Metric [strong factorial] invariance	76	355.0	.986	.984	.064	.004	–.003
3	Scalar [equivalent scores] invariance	86	424.7	.984	.983	.066	.002	–.002
4	Full uniqueness [stringent] invariance	96	1076.0	.952	.955	.106	.040*	–.032*
4 mod	Partial uniqueness [stringent] invariance (allowing the residual errors of two items to freely vary)	94	624.5	.974	.975	.079	.013	–.010
Testing MI across sexual orientation [heterosexual vs. other]								
1	Configural [weak factorial] invariance	90	19.839.8	.987	.982	.066		
2	Metric [strong factorial] invariance	76	479.3	.980	.976	.076	.010	–.007
3	Scalar [equivalent scores] invariance	86	609.4	.974	.972	.081	.005	–.006
4	Full uniqueness [stringent] invariance	96	727.9	.968	.970	.084	.003	–.006
Testing MI across race [white vs. other]								
1	Configural [weak factorial] invariance	66	351.3	.986	.981	.068		
2	Metric [strong factorial] invariance	76	377.3	.986	.983	.066	–.002	.000
3	Scalar [equivalent scores] invariance	86	407.3	.985	.984	.064	–.002	–.001
4	Full uniqueness [stringent] invariance	96	519.2	.980	.981	.069	.005	–.005
Testing MI across cohabitation status [cohabitating vs. living separately]								
1	Configural [weak factorial] invariance	66	370.8	.985	.980	.071		
2	Metric [strong factorial] invariance	76	410.0	.984	.981	.069	–.002	–.001
3	Scalar [equivalent scores] invariance	86	461.1	.982	.981	.069	.000	–.002
4	Full uniqueness [stringent] invariance	96	672.5	.972	.974	.081	.012	–.010
Testing MI across marital status [dating vs. engaged/married]								
1	Configural [weak factorial] invariance	66	358.9	.986	.981	.069		
2	Metric [strong factorial] invariance	76	380.7	.985	.983	.066	–.003	–.001
3	Scalar [equivalent scores] invariance	86	427.4	.984	.983	.066	.000	–.001
4	Full uniqueness [stringent] invariance	96	656.4	.973	.975	.079	.013	–.011*
4 mod	Partial uniqueness [stringent] invariance (allowing the residual error of one item to freely vary)	95	466.7	.982	.983	.065	–.001	–.002

The bolded words highlight simpler alternative terms used to refer to these various forms of measurement invariance

MI=measurement invariance. All models evaluated the 10 items of the AJS scale loading onto 2 correlated latent factors and were run in Mplus 7.11 using full-information maximum likelihood estimation. The models were constructed following the guidelines established in van de Schoot et al. (2012). CFI=comparative fit index (values $\geq .90$ indicating good fit), TLI=Tucker–Lewis index (values $\geq .90$ indicating good fit), RMSEA=root mean squared error of approximation (values $\leq .08$ indicating good fit). To identify significant worsening fit for the nested models (i.e., Models 2 through 4), we used the guidelines established by Chen (2007) of an increase on the RMSEA of $> .015$ and a decrease on the CFI of $> .010$ points. *=identifies significant worsening of fit from the previous model

on a wide range of background factors and conceptually relevant relationship processes (all displaying correlations well below 0.60), supporting the discriminant validity of those scores and suggesting that they measure conceptually distinct constructs. More specifically, the correlations in the bottom half of Table 4 also further highlight the conceptual distinctions between: (1) anticipated sexual jealousy, (2) anticipated possessive jealousy, and (3) chronic jealousy. As seen in the table, the three columns

of correlations for scores on the anticipated sexual jealousy measures suggested that higher anticipated sexual jealousy was particularly linked to greater desire for monogamy and relationship dedication and to lower interest in casual sex. In contrast, chronic jealousy scores (the final column of Table 4) were more notably linked to higher attachment anxiety, negative conflict behavior in relationships, distrust of partner, psychopathy, Machiavellianism, and sex negativity. Finally, although scores on measures of anticipated

Table 4 Examining sample descriptors, gender differences, and convergent vs. discriminant validities among scales

Type of validity examined	Construct/class of constructs specific scales examined	Total poss. range	Gender identity						M–W diffi- test or (χ^2)	M–W Cohen's <i>d</i>	α
			Men		Women		Non-binary fluid				
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Convergent validity among anticipated jealousy scales											
Anticipated sexual jealousy											
1	AJS (new 5-item subscale)	1–7	5.99	1.64	6.41	1.35	5.23	2.13	5.68	–.28	.98
2	MJS-E (3 of 7 items)	1–7	5.80	1.61	6.13	1.39	4.85	2.10	4.57	–.22	.93
3	ASJS (all 5 items)	1–7	5.97	1.52	6.33	1.30	5.16	1.96	5.27	–.26	.95
Anticipated possessive jealousy											
4	AJS (new 5-item subscale)	1–7	5.04	1.23	5.28	1.30	4.36	1.40	2.81	–.19	.93
5	MJS-E (4 of 7 items)	1–7	4.88	1.16	5.16	1.20	4.17	1.40	3.49	–.23	.88
Composite jealousy											
6	AJS (total of all 10 items)	1–7	5.50	1.41	5.91	1.26	4.75	1.84	6.31	–.31	.95
7	MJS-E (total of all 7 items)	1–7	5.38	1.16	5.72	1.10	4.60	1.42	4.46	–.30	.95
8	CJS (all 6 items)	1–7	3.03	1.42	2.98	1.31	2.63	1.15	–0.79	.04	.92
Discriminant validity w anchor constructs from nomological net											
Orientation toward sex											
	Desire for monogamy	1–6	4.52	1.53	4.99	1.43	3.48	1.86	6.58	–.32	–
	Embracing of casual sex	1–9	4.22	1.64	3.32	1.53	4.08	1.65	–11.77	0.57	0.85
	EDSA in last 6 months*	0–1	21%		15%		31%		–9.48		
	No. EDSA partners**	1–20	3.25	4.14	2.19	2.38	1.78	1.20	–2.82	.31	–
	Non-heterosexual identification	0–6	0.73	1.54	0.91	1.38	3.67	1.39	2.66	–0.13	–
	Sexual sensation seeking	1–6	3.83	1.05	3.16	1.08	3.34	0.91	–13.15	.63	0.86
	Sex negativity	1–6	1.41	0.74	1.29	0.53	1.49	0.74	–3.62	.18	0.95
	Sex positivity	1–6	5.14	0.89	4.94	0.99	4.86	0.8	–4.41	.21	0.91
Dark Triad											
	Machiavellianism	1–6	3.40	0.91	3.06	0.81	2.92	0.86	–8.38	0.4	0.8
	Narcissism	1–6	3.21	0.77	3.03	0.75	2.72	0.74	–4.64	0.23	0.72
	Psychopathy	1–6	2.63	0.82	2.11	0.67	2.28	0.84	–14.4	0.69	.75
Attachment											
	Attachment anxiety	1–6	2.95	1.31	3.14	1.37	3.49	1.20	2.90	–.14	.92
	Attachment avoidance	1–6	2.55	1.01	2.39	1.03	2.39	1.05	–3.22	.15	.84
Relationship processes											
	Relationship dedication	1–6	3.75	1.18	3.85	1.19	3.87	1.23	1.80	–.09	.88
	Negative conflict behavior	1–6	1.81	0.92	1.72	0.73	1.33	0.37	–2.20	.10	.88
	Distrust of partner	1–6	2.64	1.32	2.36	1.11	1.76	0.65	–3.35	.22	0.8

Table 4 (continued)

Type of validity examined	Construct/class of constructs specific scales examined	Total poss. range	Gender identity						M–W diffi- test or (χ^2)	M–W Cohen's <i>d</i>	α
			Men		Women		Non-binary fluid				
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Freq. of sexual activity		0–31	5.60	5.76	4.68	4.29	4.71	6.10	–3.88	.18	
Partner responsiveness		1–6	4.51	1.27	4.51	1.29	5.13	0.77	0.08	.00	
Partner attractiveness		1–6	4.82	0.98	4.63	1.03	4.79	1.15	–4.04	.19	
Relationship satisfaction		0–41	30.25	9.24	30.41	9.58	33.28	6.96	0.36	–.02	
Type of validity examined											
Correlations among scales											
Sexual											
Construct/class of constructs specific scales examined		1	2	3	4	5	6	7	8	Chron	
Convergent validity among anticipated jealousy scales											
1	AJS (new 5-item subscale)		.95	.98	.66	.61	.95	.85	.11		
2	MJS-E (3 of 7 items)	.93		.95	.72	.66	.94	.90	.18		
3	ASJS (all 5 items)	.98	.96		.67	.63	.95	.87	.11		
Anticipated possessive jealousy											
4	AJS (new 5-item subscale)	.66	.72	.70		.86	.89	.87	.34		
5	MJS-E (4 of 7 items)	.62	.67	.65	.89		.79	.92	.33		
Composite jealousy											
6	AJS (total of all 10 items)	.96	.92	.95	.92	.83	.95	.95	.20		
7	MJS-E (total of all 7 items)	.84	.88	.87	.89	.94	.95		.25		
Chronic jealousy											
8	CJS (all 6 items)	.15	.23	.18	.47	.49	.23	.42			
Discriminant validity w anchor constructs from nomological net											
Orientation toward sex											
	Desire for monogamy	.49	.49	.49	.41	.39	.5	.48	0.15		
	Embracing of casual sex	–.32	–.32	–.31	–.21	–.22	–.31	–.28	–.05		
	EDSA in last 6 months*	–.24	–.20	–.22	–.15	–.12	–.20	–.22	.04		
	No. EDSA partners**	–.24	–.24	–.24	–.20	–.17	–.22	–.23	–.04		
	Non-heterosexual identification	–.23	–.23	–.23	–.23	–.20	–.25	–.19	0.00		
	Sexual sensation seeking	–.16	–.12	–.14	–.01	–.02	–.14	–.06	.15		
	Sex negativity	–.16	–.14	–.16	–.10	–.05	–.12	–.16	.21		
	Sex positivity	.05	.06	.06	.13	.12	.04	.16	–.02		
Dark Triad											
	Machiavellianism	.02	.04	.02	.12	.10	.04	.09	.22		
	Narcissism	–.04	–.01	–.02	.06	.05	–.01	.01	.11		

Table 4 (continued)

Type of validity examined	Correlations among scales									
	Sexual			Possessive			Composite			
	1	2	3	4	5	6	7	8	Chron	
Construct/class of constructs specific scales examined										
Psychoopathy	-.16	-.13	-.16	-.03	-.03	-.03	-.12	-.12		.28
Attachment										
Attachment anxiety	.04	.09	.05	.17	.22	.09	.17	.17		.41
Attachment avoidance	-.09	-.08	-.09	.03	.05	-.05	-.02	-.02		.17
Relationship processes										
Relationship dedication	.26	.25	.26	.15	.15	.23	.20	.20		-.01
Negative conflict behavior	-.08	-.05	-.07	.00	.01	-.03	-.09	-.09		.33
Distrust of partner	-.13	-.11	-.13	.06	.07	-.05	-.02	-.02		.32
Freq. of sexual activity	-.05	-.1	-.04	-.00	-.00	-.03	-.04	-.04		.07
Partner responsiveness	.05	.06	.05	-.03	-.02	.02	.02	.02		-.06
Partner attractiveness	.03	.07	.05	.12	.14	.04	.12	.12		.11
Relationship satisfaction	.07	.07	.07	.00	.00	.05	.03	.03		-.09

Sexual = Sexual Jealousy, Possessive = Possessive Jealousy, Chron = Chronic Jealousy

Note For ease of interpretation, significant gender differences and their corresponding Cohen's ds have been bolded in the top third of this table. Similarly, convergent correlations among the jealousy scales ≥ have been bolded in the middle portion of this table. Finally, significant discriminant validity correlations have been bolded in the final portion of this table

possessive jealousy demonstrate a pattern of correlations similar to (albeit possibly slightly weaker than) anticipated sexual jealousy, higher possessive jealousy was also weakly linked to greater partner attractiveness, higher attachment anxiety, and greater sex positivity. Thus, these correlational findings serve to highlight the potential conceptual differences across these three forms of jealousy.

Construct Validity of the Anticipated Jealousy Scale

Considering the set of conceptually distinct constructs represented in the bottom half of Table 4 as a nomological network (Cronbach & Meehl, 1955) related to anticipated sexual and possessive jealousy, scores on the AJS subscales also reproduce patterns of association nearly identical to those obtained from the conceptually equivalent ASJS and MSJ scales, supporting the construct validity of the AJS subscales (see Cronbach & Meehl, 1955). For example, the three columns presenting the discriminant correlations for the anticipated sexual jealousy scales examined show strikingly similar correlations with each of the constructs represented in each of the rows (e.g., correlations of -0.32 , -0.32 , and -0.31 for SOI scores on the corresponding AJS, MJS, and ASJS (sub)scales respectively). Nearly identical patterns of correlations across the nomological net also emerged for scores on the AJS possessive jealousy subscale with scores on the MJS-E possessive jealousy items, as can be seen in that pair of columns. Thus, although the AJS subscales represent psychometrically optimized scales, these results would suggest that the AJS subscales continue to assess the constructs of sexual and emotional/possessive jealousy as previously examined in the literature.

Levels of Anticipated Jealousy

As shown in the means presented in Table 4, respondents in the current sample reported fairly high levels of sexual jealousy, consistent with a majority (72%) of respondents identifying their relationships as monogamous. A repeated measures ANOVA suggested that although individuals reported moderately high levels of possessive jealousy, those ratings were significantly lower than their ratings of sexual jealousy ($F(1, 461) = 610.4$, $p < 0.001$, $d = 0.91$). Female respondents reported slightly higher levels of anticipated jealousy across all measures and both dimensions (sexual and possessive), yielding Cohen's d 's ranging from -0.19 to -0.31 . Consistent with this, female respondents also reported significantly greater desires for monogamy and lower levels of embracing casual sex and sexual sensation seeking, suggesting that female respondents held more traditional and somewhat restrictive attitudes toward sex.

Discriminating Information and Power Provided by the Anticipated Jealousy Scale

Information Provided

As mentioned above, IRT generates information curves for each item in an analysis. Those item information curves can then be added together to create test information curves that detail the amount of information a set of items (i.e., a subscale) would offer when used together. As shown in Fig. 1a, the 5-item AJS sexual subscale offered nearly double the information to detect differences between individuals than the 5-item Buunk ASJS scale or the three sexual items from the MJS emotional subscale. The information for these anticipated sexual jealousy scales was restricted to the range of roughly 1.5 SDs below the mean to about 1 SD above the mean. This is due to the fact that individuals greater than 1 SD above the mean tended to score the maximum on all of the scales examined, and individuals beyond 1.5 SDs below the mean tended to score the minimum on those scales. Similarly, the 5-item AJS possessive subscale offered nearly double the information offered by the four possessive items of the MJS emotional subscale, suggesting that the IRT analyses were effective at helping us select optimal items for our scales.

Power to Detect Differences

In the process of estimating the information curves for each item, IRT also estimates latent scores for each subject on the construct assessed by the items. Within the IRT equations, the construct being assessed by a set of items is identified as θ , and so IRT provides θ estimates for each subject. Thus, the IRT analyses on the anticipated sexual jealousy items yielded θ estimates representing latent sexual jealousy scores, whereas the IRT on the possessive jealousy items yielded θ scores representing latent possessive jealousy. To test the power of the various scales to detect subtle differences in each of those constructs, we created 10 equally sized groups based on the IRT-derived θ scores from each analysis. We then calculated the Cohen's d 's for detecting a mean difference in jealousy between adjacent sexual or possessive jealousy groups for each of the scales examined, and tested corresponding effect sizes yielded by different scales (see equations in Meng et al., 1992). As seen in Fig. 1c, the AJS sexual jealousy subscale yielded significantly stronger standardized effect sizes than the 3 sexual jealousy items of the MJS and all 5 items of the ASJS on 16 of the 18 contrasts tested. Thus, the AJS sexual jealousy subscale was more effective than scales of similar lengths at detecting subtle between-group differences in sexual jealousy. Similarly, as seen in Fig. 1d, the AJS possessive jealousy subscale was more effective than the 4 possessive jealousy items of the

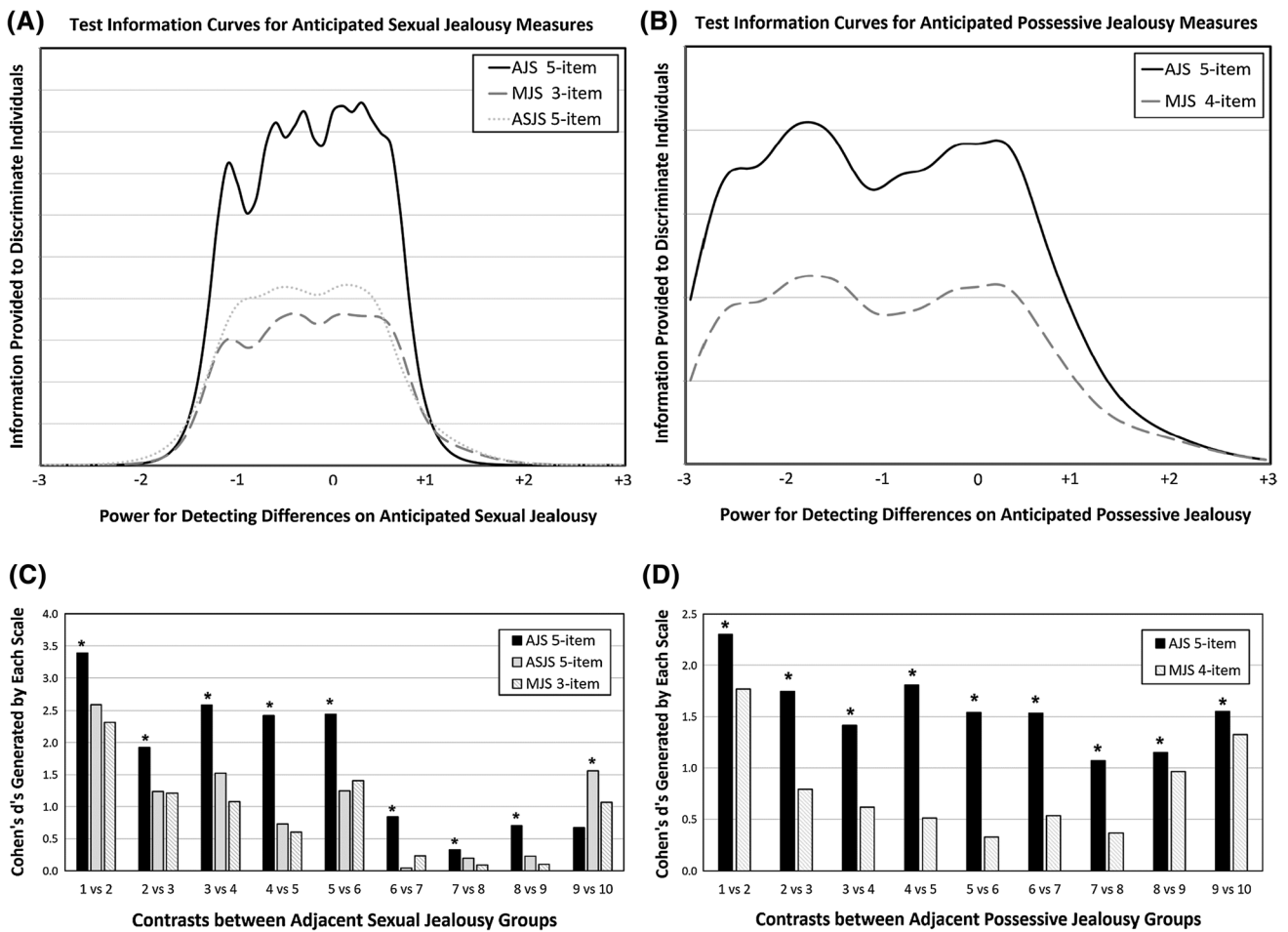


Fig. 1 Using IRT to Estimate the Information and Power Offered by Scales within the 1852 Individuals. *Note:* In Panels **a** and **b**, greater height above the x-axis suggests greater information to detect differences between subjects. In Panels **c** and **d** the subjects were grouped into 10 roughly equal groups based on their IRT estimates of sexual

c and possessive **d** jealousy to evaluate the resulting effect sizes for each corresponding scale in detecting differences between adjacent jealousy groups. * significant difference in effect sizes ($p < .05$; see Meng et al., 1992 for method)

MJS emotional subscale, yielding stronger effect sizes for every adjacent group contrast.

Predicting Various Forms of Jealousy

To further explore the discriminant validity suggested by correlations of the jealousy scales with constructs in the nomological net, we ran a series of multiple regression analyses allowing a set of background factors to predict: (1) anticipated sexual jealousy, (2) anticipated possessive jealousy, and (3) chronic jealousy. As seen in the top half of Table 5, although all three forms of jealousy were predicted by greater desire for monogamy, this prediction was particularly pronounced for anticipated sexual and possessive jealousy. After controlling for the other predictors in the model, anticipated sexual jealousy was also weakly predicted by lower levels of psychopathy, sociosexual orientations less embracing of casual sex, and higher levels of Machiavellianism.

These results continue to highlight the primarily adaptive nature of being jealous of a partner engaging sex with someone else in the context of a predominantly monogamous sample. In contrast, after controlling for the other predictors in the model, anticipated possessive jealousy was also weakly predicted by higher attachment anxiety and Machiavellianism, suggesting that being jealous of a partner's close friendships might be fueled by one's own insecurities. Finally, chronic jealousy was predominantly predicted by higher psychopathy and attachment anxiety, highlighting more maladaptive correlates underlying that more pervasive form of jealousy.

Incremental Validity of the Anticipated Jealousy Scale for Predicting Relationship Dynamics

The bottom half of Table 5 presents the results of multiple regression analyses in which chronic jealousy, anticipated sexual

Table 5 Regressions exploring background predictors of jealousy and incremental predictive links between jealousy and relationship dynamics

Outcome variables												
Regressions predicting forms of jealousy												
Predictors	AJS sexual			AJS possessive			CJS chronic			CJS acute		
	B	b	p	B	b	p	B	b	p	B	b	p
(Constant)	4.44		<.0005	2.59		<.0005	.27		<.0005			.177
Desire for monogamy	.43	.43	<.0005	.32	.38	<.0005	.12	.13	<.0005	.13	.13	<.0005
Sociosexual orientation embracing of casual sex (SOI)	-.11	-.11	<.0005	-.05	-.07	.055	-.11	-.13	<.0005	-.13	-.13	<.0005
Attachment anxiety (ECR-R)	.04	.03	.147	.12	.13	<.0005	.38	.38	<.0005	.38	.38	<.0005
Attachment avoidance (ECR-R)	-.01	-.01	.687	.07	.05	.125	.00	.00	.919	.00	.00	.926
Machiavellianism (SD3)	.19	.11	<.0005	.17	.12	<.0005	.00	.00	.926	.00	.00	.926
Narcissism (SD3)	-.06	-.03	.185	.10	.06	.085	.10	.05	<.0005	.10	.05	<.0005
Psychopathy (SD3)	-.16	-.09	<.0005	-.08	-.05	.236	.47	.27	<.0005	.47	.27	<.0005
Regressions predicting relationship dynamics												
Predictors	Negative Conflict Behavior			Distrust			Perceived Partner Responsiveness			Relationship Satisfaction		
	B	b	p	B	b	p	B	b	p	B	b	p
(Constant)	1.64		<.0005				2.39		<.0005	4.49		<.0005
Anticipated sexual jealousy (AJS)	-.03	-.06	.173	-.19	-.23	<.0005	.10	.12	<.0005	.68	.11	<.0005
Anticipated possessive jealousy (AJS)	-.07	-.12	<.0005	.08	.08	.066	-.10	-.10	<.0005	-.27	-.04	<.0005
Chronic jealousy (CJS)	.23	.38	<.0005	.28	.31	<.0005	-.03	-.03	.340	-.62	-.09	<.0005

For ease of interpretation, significant regression coefficients indicating incremental predictive validity have been bolded

AJS = Anticipated Jealousy Scale; CJS = Chronic Jealousy Scale; ECR-R = Experiences in Close Relationships-Revised; SD3 = Short Dark Triad scale. Regression coefficients for the predictors that were significant at $p < .05$ have been bolded to facilitate interpretation

jealousy, and anticipated possessive jealousy were allowed to predict dynamics within a current romantic relationship. As seen in Table 5, after controlling for the other forms of jealousy assessed, anticipated sexual jealousy predicted lower distrust, higher perceived partner responsiveness, and higher relationship satisfaction, highlighting possible benefits of this form of jealousy for romantic relationships. In contrast, anticipated possessive jealousy offered more mixed results, predicting lower negative conflict behavior (less frequently doing things like shouting, calling names, and insulting a partner when in a disagreement) as well as lower perceived partner responsiveness (seeing one's partner as less understanding and validating of one's own emotions), suggesting that individuals reporting this form of jealousy might experience their partners as more disengaged. Finally, chronic jealousy predicted greater negative conflict, greater levels of distrust in a partner, and lower relationship satisfaction, highlighting a possible destructive influence this form of jealousy might have on relationships.

Criterion Validity of the Anticipated Jealousy Scale with Respect to Open Relationships

As shown in Fig. 2a, differences in levels of jealousy emerged across fundamental types of relationship commitment

structures assessed with the MSOCS (Legate & Rogge, 2019). Specifically, ANOVA analyses and subsequent Tukey post hoc analyses demonstrated that individuals in fully open consensual non-monogamous relationships (marked by high levels of mutual consent, comfort, and communication) reported the lowest levels of anticipated sexual jealousy ($F(3, 1824) = 151.9, p < 0.0005$) and anticipated possessive jealousy ($F(3, 911) = 27.4, p < 0.0005$) whereas monogamous relationships demonstrated the highest levels of anticipated jealousy. Given that the two lowest answers of the AJS response scale endorse “fairly pleased” and “very pleased” anticipated reactions, the AJS sexual subscale could also be used to identify individuals reporting compersion (i.e., individuals experiencing positive feelings at the thought of their romantic or sexual partners finding sexual pleasure with others). As shown in Fig. 2b, rates of endorsing compersion (average scores below 2.5 on the AJS sexual subscale) differed across the four types of relationship structures ($\chi^2(3) = 131.7, p < 0.0005$). Subsequent pairwise comparisons (using a Bonferroni correction for multiple comparisons) suggested that although there were higher rates of individuals endorsing compersion in all three forms of non-monogamous relationship structures than in monogamous

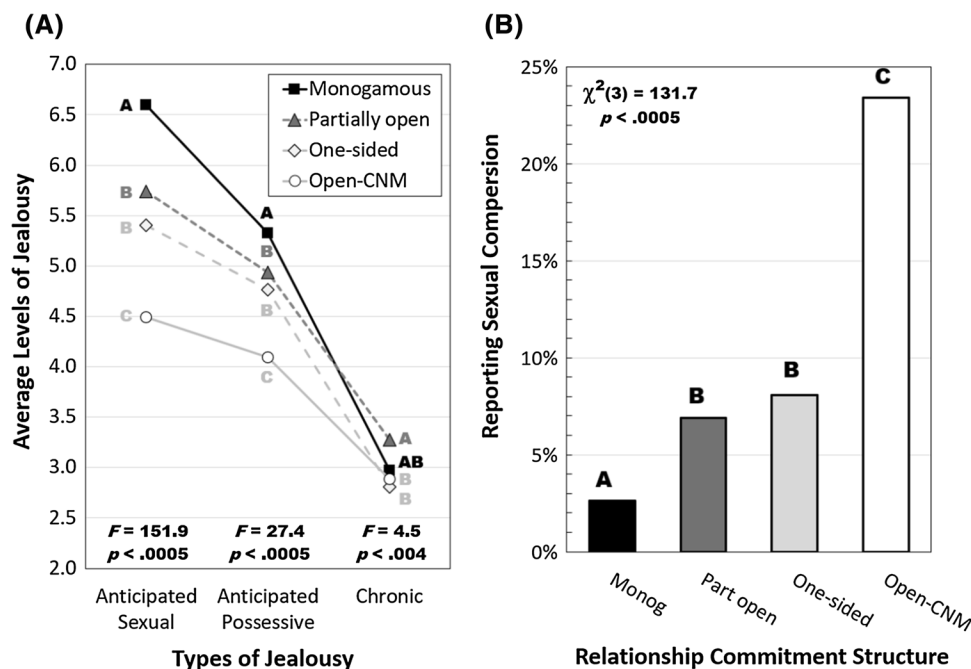


Fig. 2 Levels of Jealousy and Compersion across Different Relationship Commitment Structures. *Note* Anticipated jealousy was measured with the AJS. The F statistics presented in panel A are from ANOVAs testing for differences across the relationship structure groups. Significant main effects were explored with Tukey post hoc analyses and the letters in the figure present the results of those post hoc tests. Thus, for each column of means for a specific form of jealousy, means sharing a common letter were not significantly dif-

ferent, whereas means with different letters emerged as significantly different. Compersion was identified as scores below 2.5 on the AJS sexual subscale. The significant χ^2 suggesting group differences was followed by pairwise comparisons (using a Bonferroni correction), and the letters above the bars in panel B represent those results (with different letters once again suggesting significant differences in proportions between groups)

relationships (in which only 2.6% of individuals endorsed compersion), the rates of compersion were markedly higher among individuals in fully open consensual non-monogamous relationships (in which 23.4% of individuals endorsed compersion). Taken together, these results suggest that scores on the AJS show robust differences across these fundamental types of relationships, supporting their criterion validity.

Discussion

The present study used IRT to evaluate the quality of information provided by a set of well-validated measures of anticipated jealousy. By shifting to a more expansive item pool, the results highlighted two distinct forms of anticipated jealousy—getting upset and jealous over overt sexual activities a partner engages in with others (anticipated sexual jealousy), and getting upset over a partner developing emotional bonds with others, even if those bonds are entirely platonic (anticipated possessive jealousy). These forms of anticipated jealousy had been confounded within one another on previous scales (i.e., the MJS). The results further suggested that IRT-derived subscales assessing those dimensions (i.e., the new AJS) offer greater discriminating information and power for detecting meaningful differences among subjects on those two forms of jealousy. Thus, by using advanced statistical techniques in a large-scale study, a psychometrically optimized scale was created. Correlational results suggest strong convergent validity of the AJS sexual jealousy subscale with the ASJS, and discriminant validity with other forms of jealousy and with measures of individual traits, attitudes toward sexuality, and relationship functioning. Analyses within 30 different demographic subgroups in the sample suggested that the AJS subscales would operate well across a diverse range of future samples. Table 6 summarizes the various strengths and weaknesses of the anticipated jealousy scales examined in this study.

Implications

Sexual and Possessive Jealousy Are Distinct

The EFA results suggested potential utility in conceptually distinguishing between anticipated sexual and possessive jealousy. Specifically, although sexual and possessive jealousy were modestly correlated, suggesting that they tend to be linked across individuals, they only shared 44% of their variance with one another. Thus, each dimension contains much unique variance, and collapsing them into a single dimension may obscure meaningful results. As such, this suggests that experiencing jealousy over the possibility of a romantic partner having sex with another individual can be reasonably different from being jealous over a romantic

partner growing emotionally close to another person. Sexual jealousy may be a more normative experience, potentially motivating relationship maintenance behaviors. Thus, high sexual jealousy could be indicative of individuals' own faithful intentions in the relationship. Consistent with this, anticipated sexual jealousy was linked to higher relationship dedication in the current study and in previous work (Rydell et al., 2004), and has even been prospectively linked to dating relationships progressing to marriage (Mathes, 1986). More specifically, sexual jealousy has been linked to positive mate retention behaviors, such as being more attentive, affectionate, complimentary, and effortful in appearing attractive to own romantic partner (Buss, 1988; Buss & Shackelford, 1997). Although endorsed at slightly lower levels than sexual jealousy, possessive jealousy was also common in the current sample. Given its potential for restricting the social networks of romantic partners, possessive jealousy could potentially have more damaging consequences in romantic relationships, particularly if taken to the extreme. Consistent with this, possessive jealousy has been linked to lower relationship satisfaction (Guerrero & Eloy, 1992), and to greater relationship uncertainty, especially when possessive jealousy was directed toward cross-sex friendships (Bevan, 2004). As the current findings extend previous work by adding nuances to the nomological net of constructs related to anticipated jealousy, future work will need to explore the longitudinal effects of both forms of jealousy to determine the differing ways they might fit into models of relationship functioning. Future work could also examine the potentially differing impacts of an individual's anticipated jealousy on his or her romantic partner within dyadic samples. It might be that possessive jealousy could have the strongest adverse effects on the partner of an individual high on possessive jealousy.

The Anticipated Jealousy Scale Offers an Optimized Scale

As demonstrated by test information curves from the IRT results and the corresponding effect sizes for estimating small but meaningful differences in jealousy, the anticipated sexual and possessive jealousy subscales of the AJS provide more information than the existing measures (i.e., MJS and ASJS). This additional level of information (and correspondingly lower noise) translates into greater power for detecting differences between individuals. This is especially critical when using these jealousy measures in smaller samples with lower levels of power to detect meaningful effects (see Table 6). Thus, the AJS is able to provide twice as much information as the existing scales, while still consisting of only 10 items. The AJS also offers flexibility to researchers. Given the correlations between the two subscales ($r = 0.66$), those two subscales will often show distinct patterns of results within models. In such a situation, we would suggest that researchers retain them as distinct scales so as not to obscure

Table 6 A comparison of Anticipated Jealousy Scales

Class of characteristics specific considerations	AJS	MJS—emotional	ASJS—sexual
Scale properties/development/validation			
Number of items	10 (two 5-item subscales)	7	5
Forms of anticipated jealousy assessed	Sexual and possessive separately	Sexual combined with possessive	Sexual
Inclusive language (i.e., avoiding "opposite sex" items)	Yes	No	No
Details on item selection provided	Yes	No	No
IRT optimized (providing greater power likely critical in smaller samples)	Yes	No	No
Generalizability of internal consistency (remains effective in specific demographic subsamples)	Evaluated across 30 specific demographic groups in current large-scale sample	Used in 450+ studies	Used in 100+ studies
Measurement invariance demonstrated	Across gender, race, sexual orientation, cohabitation, and marital status	Across gender (1 paper)	No
Diverse criterion validity	Preliminary support in current manuscript	Demonstrated in 450+ studies	Demonstrated in 100+ studies
Recommended use based on conceptual focus			
Study focused on anticipated sexual jealousy only	Yes—one subscale	No—blended subscale	Yes—total score
Study focused on anticipated possessive jealousy only	Yes—one subscale	No—blended subscale	No—lacking that content
Study focused on overall anticipated jealousy	Yes—total score	Yes—subscale score	No—lacking possessive
Recommended use based on sample size			
Large ($Ns \geq 500$) samples with ample power	Yes—IRT optimized	Yes—still offers sufficient info	Yes—still offers sufficient info
Modest samples (Ns from 100 to 500)	Yes—IRT optimized	Slightly risky—not as much precision/power	Slightly risky—not as much precision/power
Small samples ($Ns \leq 100$) with notably lower power	Yes—IRT optimized	No—lacking critical power	No—lacking critical power

IRT = item response theory

meaningful results. However, that correlation also suggests that sometimes the two subscales might show converging patterns of results (suggesting that the effects are being driven by the shared variance between the subscales). In such cases, we would recommend simply averaging the two subscales together to create a blended construct akin to the MJS emotional jealousy subscale, as that would offer the most parsimonious presentation of results.

Linking the Anticipated Jealousy Scale to the Existing Literature

The two subscales of the AJS have evidenced excellent convergent validity. The sexual jealousy subscale of the AJS correlates strongly with the existing sexual jealousy scale

(ASJS), sharing 96% of their variance, strongly suggesting that they are measuring the same construct. The AJS sexual jealousy subscale also reproduced a nearly identical pattern of associations to that of the ASJS with the diverse array of constructs from the nomological net examined, strongly supporting its construct validity by suggesting that, although psychometrically optimized, it continues to assess the same construct as the ASJS. Thus, use of the AJS would link directly to the body of work associated with the ASJS. In contrast, given the blended nature of the items of the MJS emotional subscale, it demonstrated convergent correlations with both AJS subscales, with the ASJS, and most notably with the composite score on the AJS. Thus, for researchers interested in extending work on the construct assessed by the MJS emotional subscale, the current results suggest that they

could combine all 10 items of the AJS into a total score. This would offer a method of assessing that blended construct with higher levels of precision and power (see Table 6).

There Are Many Forms of Jealousy

The anticipated sexual and possessive jealousy subscales of the AJS demonstrate discriminant validity with one another, and with chronic jealousy. The EFA analyses paired with the moderate correlations observed among these scales indicate these to be three clearly distinct constructs. The regression analyses also served to highlight that these three forms of jealousy have somewhat distinct predictors and might impact romantic relationship functioning in different manners. These differences might originate in the conceptual definitions underlying these scales. Whereas chronic jealousy is conceptualized as a trait, pulling for more individual trait-like dispositions, by focusing on specific partner behaviors and immediate emotional respondent reactions, the AJS subscales likely represent a blend of trait and state variance. Therefore, while some levels of anticipated sexual or possessive jealousy may remain more stable overtime, some daily or weekly fluctuations in such types of jealousy may be present. Future longitudinal work, potentially in the form of daily or weekly diary studies, could examine the transactional links between the two forms of anticipated jealousy assessed by the AJS and a variety of relationship constructs and processes (e.g., relationship discord, relationship conflict, emotional support, forgiveness). Such studies could help to determine the degree to which jealousy precedes other relationship issues (in a more causal manner) or if it largely represents a reaction to ongoing relationship discord and decay. Conceptualizing anticipated jealousy as a relationship process with the AJS would also allow it to be examined as a possible treatment outcome as levels of anticipated jealousy—particularly possessive jealousy—might demonstrate gradual decreases over the course of effective marital therapy.

Strengths and Limitations

The current study developed and validated the AJS as a measure of anticipated sexual and possessive jealousy in a large and diverse online sample using a wide range of analyses. Despite these strengths, the results of the current study are tempered by a number of limitations. To begin, the sample of the current study was primarily white and female. Although the size of the sample still provided 736 men and 365 non-white individuals (allowing us to ensure that the internal consistency of the AJS subscales remained optimal across demographic subgroups), future studies with more diverse samples are needed to extend the generalizability of these results. Second, the study is entirely based on self-report data, raising concerns over reporting biases and possible lack of

insight on the part of respondents. In order to get a more complete picture and to ascertain agreement between partners, future research could ask both partners of a romantic dyad to report on own and partner's jealousy. A third limitation is that the study made use of entirely cross-sectional data. Thus, although significant correlations emerged between anticipated sexual and possessive jealousy with individual and relationship processes (i.e., desire for monogamy, relationship dedication), directions of causality underlying those associations remain unclear. Thus, future work with longitudinal data and/or experimental methods is needed to establish the directionality of influence between anticipated jealousy and other relationship processes. The final concern is that the study was conducted entirely online. Although the digital divide continues to narrow, the online-only accessibility could have made it more difficult for low income individuals to participate. Future work should extend its accessibility to reach more diverse samples. Despite these limitations, the results offer compelling evidence supporting the AJS as an effective measure of anticipated sexual and possessive jealousy, offering greater precision, power, and conceptual clarity.

Author Contributions RR and AP designed the study together (with input from AB) and developed the study materials. RR obtained IRB approval and programmed the survey online. RR, AP, and AB recruited the sample, cleaned the data, and ran the analyses together. RR developed the tables and figures while AP wrote the first draft of the manuscript. All three authors then copy edited the manuscript and are responsible for all of its content.

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Declarations

Conflicts of interest Neither author has any financial conflicts of interest to report for this project or this manuscript.

Ethical Approval All procedures and materials for this study were approved by an University of Rochester Research Subjects Review Board (our IRB).

Data Availability The IRB materials, study materials, SPSS syntax, Mplus syntax and output, and data for this manuscript will be made available on the osf.io website.

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