

**Comparing relationship quality across different types of romantic partners in polyamorous and monogamous relationships**

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### ABSTRACT

Polyamory is the practice of having multiple emotionally-close relationships that may or may not be sexual. Research concerning polyamory has just begun to determine how relationships among partners in polyamorous arrangements may vary. Most of the research assessing perceptions of polyamorous partners has focused on primary-secondary configurations; however, non-hierarchical configurations exist, such as having multiple primary partners or having only non-primary partners. The current research is the first to examine perceptions of partners and relationship quality in various polyamorous configurations and compares results for each configuration to monogamous partners. Results from online convenience samples suggest that co-primary and non-primary configurations are common among polyamorous participants, with approximately 38% identifying with one of these configurations in 2013, and 55% in 2017. Furthermore, our results suggest that while relationships within co-primary structures still differ in some ways (e.g., investment, acceptance and secrecy, time spent having sex), they are closer to their ideals on several psychologically meaningful indicators of relationship quality (e.g., commitment and satisfaction). In other words, despite rejecting hierarchical primary-secondary labels, many of the same relationship qualities differ systematically among partners in non-hierarchical relationships. Furthermore, pseudo-primary partners and primary partners in these relationships are more comparable to monogamous partners than they are to secondary partners. We discuss how these results inform our understanding of polyamorous relationships and the most common configurations among those who identify as polyamorous and suggest future directions based on these findings.

**Keywords:** polyamory; consensual non-monogamy; monogamy; relationship configurations; primary status

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Although monogamous marriage is currently the most established relationship formation in developed countries (Henrich, Boyd, & Richerson, 2012), interest in consensually non-monogamous (CNM) relationships has burgeoned. CNM relationships are those in which partners explicitly agree that they, or their partners, can have extradyadic romantic or sexual relationships (Conley, Ziegler, Moors, Matsick, & Valentine, 2012). The increased interest in CNM relationships is reflected in rising Google searches (Moors, 2016), heightened media attention (e.g., polyamory-themed shows such as ‘You Me Her’ and ‘Unicornland’), the inclusion of polyamorous as a relationship orientation on the popular dating site OkCupid (Khazan, 2016), and in scientific reports of the prevalence and outcomes of CNM arrangements (Conley, et al., 2012; Hauptert, Gesselman, Moors, Fisher, & Garcia, 2017; Rubin, Moors, Matsick, Ziegler, & Conley, 2014).

CNM is an overarching term for relationships that are consensually non-monogamous. The three most common types of CNM relationships are swinging, open, and polyamorous (Barker, 2011). Polyamory is of interest to relationship scholars because it is a relationship-oriented approach to non-monogamy, rather than a structure permitting and focusing on extradyadic sexual relationships (Weitzman, Davidson, & Phillips, 2009). While polyamory includes many different styles of intimate involvements (see Sheff, 2014; Klesse, 2006; Munson, & Stelbourn, 1999; Pines, & Aronson, 1981), research suggests that the majority of polyamorous-identified individuals have two concurrent partners (Wosick-Correa, 2010), and relationships with these partners are often characterized by a distinction between primary and secondary partnerships (Veaux, 2011; Veaux, Hardy, & Gill, 2014). In fact, a defining feature of

one's relationship configuration in polyamory is premised on whether individuals consider each other to be primary partners in a relationship, and how primary status is defined (Cohen & Fervier, 2017).

In the primary-secondary configuration, a primary relationship is between two partners who are more interdependent, that is, they typically live together and share finances, are married, and are raising children together if children were desired (Balzarini et al., 2017; Klesse, 2006). A secondary relationship is less interdependent, and consists of partners who live in separate households, do not share finances, and are afforded relatively less time, energy, and priority in a person's life than primary partners. Because secondary relationships often consist of less ongoing commitments, such as plans for the future (Veaux, 2011; Veaux, Hardy, & Gill, 2014), research has begun to examine how commitment processes may differ between primary and secondary partners within CNM and polyamorous relationships (Balzarini et al., 2017; Mitchell, Bartholomew, & Cobb, 2014; Mogilski, Memering, Welling, & Shackelford, 2017). Research of this sort has typically found that people report greater acceptance from friends and family, more investments, greater relationship satisfaction, and higher commitment with reports of primary partners, while relationship secrecy and a greater proportion of time spent on sex are reported with secondary partners (Balzarini et al., 2017; Balzarini et al., 2018).

Not all polyamorists, however, have simultaneous primary and secondary relationships, and not all polyamorists identify with the hierarchical terminology of primary-secondary as classifiers for their relationship configuration (Sheff, 2014). In fact, Ritchie and Barker (2006) reported that some of their participants challenged the idea that primary 'couples' were the only way of managing CNM relationships, while Labriola (2003) noted that three types of

polyamorous relationships exist: the primary/secondary model, multiple primary partners model, and multiple non-primary partners model.

Up to this point, these latter configurations have been largely ignored in research concerning polyamory and CNM relationship outcomes. Because only 38% of past participants (Balzarini et al., 2018) explicitly reported primary-secondary arrangements in their polyamorous relationships, research that fails to recognize other relationship structures may be overlooking the relationship dynamics of most polyamorists. On one hand, it is tempting to assume that many of the established relationship differences between primary and secondary partners would not exist within multiple primary or multiple non-primary polyamorous arrangements because of their implicit commitment to equality across relationship partners. On the other hand, partners within such relationships may still be differentiated in terms of their relationship duration, or other tangible and intangible relationships investments, so there remains reason to expect some of these differences to emerge as well.

Much of the past research concerning relationship quality in polyamorous or other CNM relationships can also be criticized for failing to differentiate between separate dyadic relationships within CNM configurations when comparing relationship outcomes between monogamous and CNM relationships (for recent exceptions, see Balzarini et al., 2017; Mitchell et al., 2014; Mogilski et al., 2017; Muise, Laughton, Moors, & Impett, 2018). Asking participants to collapse across multiple simultaneous relationships when reporting about relationship quality makes it difficult to accurately interpret findings that have indicated that monogamous relationships do not differ from CNM relationships in their reports of relationship and sexual satisfaction, commitment, passionate love, or sexual frequency (Conley et al., 2012; Conley, Matsick, Moors, & Ziegler, 2017; Kurdek, 1988; LaSala, 2004; Rubin, 1982; Rubel &

Bogaert, 2015). This is especially true when there are known differences between primary and secondary partners within polyamorous and other CNM relationships on many of the same variables (Balzarini et al., 2017; Mitchell et al., 2014; Mogilski et al., 2017). On the basis of such findings, it appears possible that either primary or secondary polyamorous relationships, or perhaps both relationship types, may differ somewhat from monogamous relationships on at least some of these qualities if such relationships were compared directly.

To improve upon past work in this area, the current research sought to compare the relationship characteristics of polyamorous individuals who are in primary-secondary, co-primary, or non-primary polyamorous relationships to persons in monogamous relationships. Guided by past research findings interpreted through an interdependence perspective, we specifically focused on investment processes, secrecy and acceptance, proportion of time spent on sex, and on perceptions of love.

### ***Research Overview***

Although there is growing research interest in examining similarities and differences between the nested dyadic relationships within polyamorous clusters, all of the extant research appears to be focused on primary-secondary configurations and few attempts have been made to directly compare such relationships to monogamous relationships. To address these issues, the current research sought to assess two important questions: First, will previous research findings indicating differences in relationships between primary and secondary partners (Balzarini et al., 2017) replicate among polyamorous participants who do not believe in assigning partners as primary (i.e., non-primaries), or among those who have more than one primary partner (i.e., co-primaries)? Second, how do relationships with primary and secondary partners compare to monogamous relationships? In answering these questions, the current work moves beyond

Balzarini and colleagues (2017) and Mogiliski and colleagues (2017) by comparing the relationship characteristics of polyamorous individuals who are in primary-secondary, co-primary, or non-primary polyamorous relationships to persons in monogamous relationships with regard to acceptance, relationship secrecy, commitment processes, passionate and companionate love, and desired and actual sexual frequency. To do so, two large convenience samples of individuals currently in a polyamorous relationship were recruited, and differences among partners were assessed across the varying configurations and in contrast to monogamous relationships.

### **STUDY 1**

The Investment Model (Rusbult, 1980) posits that commitment is the result of an individual's satisfaction with their partner, their investments in the relationship, and their perceived quality of alternatives (Rusbult, 1983). According to the Investment Model, greater satisfaction and investments, and lower quality of alternatives determine commitment and the continuation of a relationship. Previous research comparing investment processes among primary and secondary partners has shown that the interdependence among partners differs, such that primary partners are the recipients of greater satisfaction, greater investments into the relationship, and lower perceived quality of alternatives, resulting in greater commitment for primary compared to secondary partners (Balzarini et al., 2017). It has also been shown that perceptions of stigma and attempts to avoid stigma through maintaining the relationship in secrecy, are impacted by commitment processes and influence sexual behaviors such that lower perceived acceptance and greater secrecy about the relationship are associated with lower commitment, less satisfaction with the relationship, as well as greater proportion of time spent on sex with a partner (Balzarini et al., 2018; Lehmiller & Agnew, 2006; Lehmiller & Agnew, 2007;

Lehmiller, 2009; Lehmiller, 2012). This research suggests that interdependence processes are impacted by perceived marginalization and romantic secrecy. However, no research has assessed interdependence processes and effects of secrecy and acceptance among co-primary and non-primary partners. It is possible that participants who reject the hierarchical assignment of partners as either primary or secondary—that is, relationships that consist of multiple partners either being primary or non-primary—may result in greater attempts to distribute investments evenly across partners. This possibility could have downstream consequences on commitment and potentially result in greater acceptance, lower secrecy and so forth. However, it is also possible that important differences might still emerge despite one's identification of their primary status. For example, the amount an individual can invest into a relationship depends on resources available, and to the degree that one partner was designated resources first (e.g., because the relationship began first) because it may be difficult to realistically delegate equal investments across partners. Thus, despite one's identification as co-primary and non-primary, differences may still exist in investments for these types of partners, which may unintentionally impact other relationship processes. The goal of Study 1 was to extend previous work examining interdependence processes among partners in polyamorous relationships to see whether the effects found for primary and secondary partners replicate among co-primary and non-primary partners, and, further, to see how these results compare to ratings in monogamous relationships.

Comparing differences between relationships within polyamorous arrangements presents a particular analytic (and conceptual) conundrum when people indicate that both relationships are of similar importance (e.g., co-primary or non-primary) because constituent partners in these relationships are not distinguishable (i.e., there is no primary vs. secondary partner). With this in mind, we reasoned that because relationship characteristics such as cohabitation and relationship



length could contribute to relationship investments, differences in these relationship characteristics could be used to differentiate between dyadic relationships within polyamorous arrangements in psychologically meaningful ways. To differentiate the partners within co-primary and non-primary relationships, we will refer to *pseudo-primary* and *pseudo-secondary* partners, where pseudo-primary partners are those who had been cohabiting and have been together with the participant for a longer time (see Methods section for more details). We consequently hypothesized that among co-primary and non-primary relationships, relationships with pseudo-primary partners would be less secretive, more accepted by friends and family, have more investments, as well as greater satisfaction and commitment, but would evidence a lower proportion of time spent on sex than relationships with partners designated as pseudo-secondary (H1). Importantly, these are constructs that have previously been assessed with primary relationships and, in some cases, in comparison to monogamous relationships; however, no research has assessed these outcomes among the various polyamorous configurations.

We fully acknowledge that this strategy represents some relationships in a manner that is inconsistent with how participants themselves defined their relationships<sup>1</sup>. From our perspective, it seems possible that personally-identified relationship configurations (e.g., co-primary, non-primary) better represent an ideological or ideal approach to hierarchical status in relationships, rather than a reality of actual relationship circumstances. More specifically, we are proposing that individuals who report their partners to be co-primary or non-primary seek to afford these relationships equal opportunities and importance but are still constrained by a limited amount of

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<sup>1</sup> It is our sincere hope that our attempt to re-classify co-primary and non-primary relationships, and our imposition of the terms “pseudo-primary” and “pseudo-secondary” partners does not upset participants who contributed to this work or the wider polyamorous and CNM communities from which they were drawn. We use this language as a means to systematically differentiate among groups in our sample and for sake of simplicity in interpreting the results.

total resources (e.g., time, money, etc.) in ways that are similar to relationships in which people explicitly identify primary and secondary roles. In many ways, our argument is similar to research in other domains suggesting that people's identities and intentions do not always align with their actual behaviors (e.g., sexual orientation labels and sexual behavior do not always align; Mustanski, Van Wagenen, Eyster, & Corliss, 2014; Vrangalova & Savin-Williams, 2010). In other words, while one may identify their configuration as consisting of multiple primary partners or no primary partners, it is possible, and from our perspective likely, that systematic differences will still emerge. Furthermore, in order for us to understand relationship outcomes among partners, systematic differentiation is required, and thus some form of categorization is required.

While we expected the general pattern of results to be consistent with previous findings from primary-secondary polyamorous relationships (Balzarini et al., 2017; Mogilski et al., 2017), we also expected the effects to be attenuated to some degree. Those who identify their relationship as consisting of multiple primary partners or multiple non-primary partners reject the hierarchical assignment of the primary-secondary model and will presumably take steps to limit disparities between their relationships. As such, we predicted that the differences within co-primary and non-primary relationships would be smaller than differences within explicit primary-secondary relationships (H2).

We also compared the relationship characteristics of polyamorous and monogamous relationships. We predicted that monogamous relationships would be characterized by levels of secrecy, acceptance, investment, satisfaction, and commitment that are similar to those found in primary or pseudo-primary relationships. However, we expected the people in primary-partner relationships would report having more quality of alternatives compared to those in monogamous

relationships. Also, because polyamorous individuals have numerous partners to engage in sex with, we expected the proportion of time spent on sex across partners to be lower in primary polyamorous relationships than monogamous relationships. Across the three configurations of polyamorous relationships, we predicted that relationships with secondary, or pseudo-secondary partners, would be maintained in greater secrecy, and be less accepted, invested, satisfied, and committed compared to monogamous relationships, although we expected participants would report higher quality of alternatives to their secondary relationship partners and to spend a greater proportion of time on sex with such partners compared to monogamous partners (H3).

## **METHOD**

### ***Sampling***

The current study utilized data from two large online convenience samples obtained in 2013 that included individuals in polyamorous and monogamous relationships recruited from internet forums, dating sites, and Facebook group pages. Many of these websites and groups were specifically geared toward either a polyamorous or monogamous audience. Recruitment materials specified that participants should be in a polyamorous or monogamous relationship (advertised separately). Furthermore, to be eligible, participants had to be at least 16 years of age and currently have one (if monogamous) or more (if polyamorous) romantic partner(s). Eligible and interested participants followed a link provided within the advertisement. Informed consent was received from each participant digitally and each participant indicated they read the consent form and agreed to take part before proceeding.

### ***Participants***

A convenience sample of individuals ( $N = 4,888$ ) who were either in polyamorous ( $n = 3,530$ ) or monogamous relationships ( $n = 1,422$ ) was recruited. Excluding polyamorous

participants whose relationship structure was not primary-secondary, co-primary, or non-primary resulted in a final sample of  $n = 2,097$  polyamorous participants in the current study. The demographic information for the participants broken down by relationship orientation (i.e., either polyamorous or monogamous) and among those who were in polyamorous relationships by relationship structure (i.e., primary-secondary, co-primary, and non-primary) is presented in Table 1. Overall, the majority of respondents identified as Caucasian (84.5%), heterosexual (48.77%) or bisexual (25.18%), and female (59.13%). In addition, many were married (36.90%). The mean age ( $M_{\text{age}} = 33.59$ ,  $SD = 11.27$ , range 16-78) of the sample indicated a tendency toward young and emerging adulthood (75% of sample were 18-35), although there was substantial variation.

### ***Procedure***

Following an online informed consent procedure, participants completed the demographic items and were asked to list the initials of their current partners (one partner if monogamous, and up to four partners if polyamorous, of which the responses for the first two partners listed were used in the current study). Participants were then asked to complete various measures concerning characteristics of their relationships, such as relationship acceptance, romantic secrecy, investment, commitment level, relationship satisfaction, jealousy, quality of alternatives, quality of communication and percentage of time spent on sexual activity with their partners. Initials were piped into the survey questions and instructions so that polyamorous respondents were clear about which questions pertained to which relationship. For polyamorous participants, they were further asked to identify whether each partner was considered primary. Participants were debriefed after completing the survey. More recruitment details for the polyamorous sample can be found in previous publications of the polyamorous data only

(Balzarini et al., 2017), both the monogamous and polyamorous datasets (Balzarini et al., 2018), as well as the Open Science Framework (OSF; see: <https://osf.io/vs574/>; <https://osf.io/76p7p/>).

The hypotheses, study materials, data analytic plan, and data required to reproduce the results presented can also be found on the OSF (see: <https://osf.io/cgz3y/>). The materials and procedure were reviewed and approved by the local research ethics board before study initiation.

### ***Measures***

#### ***Relationship Structure and Primary/Secondary Status***

Relationship structure was assessed among polyamorous participants by asking, “Do you consider your relationship with (X)<sup>2</sup> to be primary?” for each partner, with response options including, “Yes, (X) is my primary relationship”, “Yes, (X) is my primary relationship, but I also have others that are considered primary”, “No, (X) is not a primary relationship”, “No, I do not believe in considering one relationship to be primary”, and “None of the above (please explain).” The relationship structure for each participant was designated as either “primary”, “co-primary” or “no primary” based on their responses to these questions. Those who stated that one listed partner was primary and the other person listed was not were considered to be in primary-secondary relationships. For co-primary relationships, participants had to indicate that both of their partners were primary partners, and for non-primary relationships, they had to indicate that they did not identify any of their partners as primary partners. Within primary-secondary configurations, primary relationships were easily distinguished from secondary relationships. When people did not identify their partners as primary or secondary (co-primaries and non-primaries), we defined pseudo-primary and pseudo-secondary relationships using a bivariate index of relationship duration and cohabitation. Specifically, we standardized scores for duration

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<sup>2</sup> Items like this were presented to participants with their partner’s initials in place of the (X).

and cohabitation and then mean averaged them to create a single score. We then assigned the relationship with the highest score the status of primary relationship and the relationship with the lowest score the status of secondary relationship.

### ***Relationship Acceptance***

The relationship acceptance scale (Lehmiller & Agnew, 2006) measures the extent to which one perceives their romantic relationship to be approved of by friends (“My friends are accepting of my relationship with (X)”) and family (e.g., “My family is accepting of my relationship with (X)”). Possible responses were on a 9-point scale (1 = *do not agree at all*, 9 = *agree completely*) and items were assessed individually, with higher scores indicating more relationship acceptance.

### ***Romantic Secrecy***

Romantic secrecy was assessed with two questions (Lehmiller, 2009) which evaluated levels of romantic secrecy (e.g., “During the past week, my relationship with (X) was secret from someone” and “During the past week, I hid some things about my involvement with (X) from some people”; primary/pseudo-primary relationship  $\alpha = .77$ ; secondary/pseudo-secondary relationship  $\alpha = .87$ ; monogamous  $\alpha = .72$ ). Possible responses were on a 9-point scale (1 = *do not agree at all*, 9 = *agree completely*) and the items were mean aggregated, with higher scores indicating more romantic secrecy.

### ***Investment Model Scale***

The Investment Model Scale (IMS; Rusbult, Martz, & Agnew, 1998) assessed relationship satisfaction (three items: e.g., “I feel satisfied with our relationship”; primary relationship 1  $\alpha = .81$ ; secondary relationship  $\alpha = .85$ ; monogamous  $\alpha = .85$ ), investments (three items: e.g., “I have put a great deal into this relationship that I would lose if the relationship were

to end”; primary/pseudo-primary relationship  $\alpha = .76$ ; secondary/pseudo-secondary relationship  $\alpha = .90$ ; monogamous  $\alpha = .68$ ), quality of alternatives (five items: e.g., “My needs for intimacy, companionship, etc. could easily be fulfilled in an alternative relationship”; primary/pseudo-primary relationship  $\alpha = .77$ ; secondary/pseudo-secondary relationship  $\alpha = .86$ ; monogamous  $\alpha = .80$ ), and commitment (four items: e.g., “I am committed to maintaining my relationship with (X)”; primary/pseudo-primary relationship  $\alpha = .90$ ; secondary/pseudo-secondary relationship  $\alpha = .93$ ; monogamous  $\alpha = .92$ ). Possible responses were on a 9-point scale (1 = *do not agree at all*, 9 = *agree completely*) and the items were mean aggregated, with higher scores indicating more relationship satisfaction, investments, quality of alternatives, and commitment.

### ***Percentage of Time Spent on Sexual Activity***

Participants were also asked to estimate the percentage of time they spent on sexual activities with each partner out of all the time they spent together (0% - 100%) using a single item (Lehmiller, VanderDrift, & Kelly, 2014).

### ***Planned Analyses***

To assess hypotheses 1-3, we began with a 3 between- (relationship structure: primary-secondary vs. co-primary vs. no primary) by 2 within-subject (primary status: primary vs. secondary) split plot ANOVA where the outcome variables included ratings for investment, secrecy, acceptance, romantic attraction, etc. Significant interactions were followed by a series of paired *t*-tests comparing the differences in all evaluated outcomes (e.g., investment, secrecy, acceptance, etc.) between primary and secondary relationships within each relationship structure (primary-secondary, non-primary, co-primary). To compare monogamous relationships with primary and secondary relationships within each polyamorous relationship structure, we conducted a series of independent samples *t*-tests. To control for the experiment-wise error rate

in hypothesis testing associated with conducting a large number of statistical tests (Kirk, 1982), the criteria for statistical significance with the multiple  $t$ -tests was corrected by using the Holm-Bonferroni adjustment method (Holm, 1979). The method is less conservative than Bonferroni adjustment yet still applies a correction factor that becomes increasingly more conservative as the number of tests increases.  $P$ -values were sequentially ranked from the smallest to largest, they were then multiplied by a factor calculated as the number of tests (eight relationship outcomes in this case) minus the rank of each respective  $p$ -value plus one; values lower than the 0.05 threshold will be rejected. The same correction factor was applied within all subgroup analyses (non-primary, co-primary) since each group contained independent, non-overlapping samples.

## RESULTS

### *Validating Index of Primary Status*

As an exploratory analysis among the polyamorous participants, we first examined if there were differences in relationship variables (e.g., marital status, living status, etc.) of partners who were listed first compared to those who were listed second in the survey, despite their self-identified relationship structure (collapsing across all potential configurations,  $N = 3,530$ ). It was assumed that participants would have listed the more “primary” partner first (partner they live with, have been with longer, etc.), despite their reported relationship structure (co-primary or non-primary). The data supported this distinction. Specifically, we found that the first person listed was much more likely to be considered a primary partner (73.24%) than the second person listed (19.77%); McNemar  $\chi^2(1) = 1309.85, p < .001, \phi = 0.72$ . Furthermore, participants reported a significantly longer relationship duration with the first person listed (7 years, 4 months) than with the second person listed (2 years, 8 months);  $t(2544) = 31.67, p < .001, d =$



0.74. Likewise, participants were substantially more likely to share a household with the first partner listed (62.88%) than the second partner listed (12.65%); McNemar  $\chi^2(1) = 1198.90, p < .001, \phi = 0.68$ .

This data pattern supported the notion that the relationships with the first listed partner tended to be more primary, whereas relationships with the second listed partner were more secondary in our sample. When we restricted analyses only to those who did not report a primary-secondary relationship structure, this pattern held; participants still reported a significantly longer relationship duration with the first partner listed (5 years) compared to the second partner (2 years, 5 months);  $t(293) = 7.40, p = .001, d = 0.49$ , albeit a slightly weaker effect. Finally, when we examined our bivariate index consisting of cohabitation status and relationship length described above, we found that all partners who were listed first invariably scored higher in this index than those partners listed second. Thus, without prompting, most participants' relationships in this sample could be classified as being more primary or secondary based on either the order in which they were listed in the survey, or the index that we constructed to differentiate between primary and secondary relationships.

### ***Relationship Characteristics by Primary/Secondary Status and Relationship Structure***

To assess potential differences in relationship functioning between primary/secondary relationship status across three polyamorous relationship structures, we conducted our planned 3 x 2 ANOVA for each relationship characteristic. Main effects emerged for relationship structure when examining romantic secrecy ( $F(2, 2846) = 4.54, p < .001$ ), acceptance from friends ( $F(2, 2838) = 32.85, p < .001$ ), acceptance from family ( $F(2, 2832) = 13.31, p < .001$ ), investment size ( $F(2, 2846) = 101.7, p < .001$ ), relationship satisfaction ( $F(2, 2846) = 13.70, p < .001$ ), perceived

quality of alternatives ( $F(2, 2845) = 41.65, p < .001$ ), commitment level ( $F(2, 2845) = 63.73, p < .001$ ), and proportion of time spent on sexual activity ( $F(2, 2889) = 12.00, p < .001$ ).

Effects for primary/secondary status also emerged when examining these variables: secrecy ( $F(1, 2846) = 178.16, p = .002$ ), acceptance from friends ( $F(1, 2838) = 128.15, p < .001$ ), acceptance from family ( $F(1, 2832) = 240.88, p < .001$ ), investment size ( $F(1, 2846) = 303.7, p < .001$ ), relationship satisfaction ( $F(1, 2846) = 122.54, p < .001$ ), perceived quality of alternatives ( $F(1, 2845) = 15.27, p < .001$ ), commitment level ( $F(1, 2845) = 277.59, p < .001$ ) and proportion of time spent on sexual activity ( $F(1, 2889) = 42.68, p < .001$ ).

Finally, interactions between relationship structure and primary/secondary status also emerged in all of these analyses: romantic secrecy ( $F(2, 2846) = 29.13, p < .001$ ), acceptance from friends ( $F(2, 2838) = 51.87, p < .001$ ), acceptance from family ( $F(2, 2832) = 63.46, p < .001$ ), investment size ( $F(2, 2846) = 149.70, p < .001$ ), relationship satisfaction ( $F(2, 2846) = 63.61, p < .001$ ), perceived quality of alternatives ( $F(2, 2845) = 22.66, p < .001$ ), commitment level ( $F(2, 2845) = 121.39, p < .001$ ), and proportion of time spent on sexual activity ( $F(1, 2889) = 17.10, p < .001$ ). Because the interactions between relationship structure and primary/secondary status were all significant, we conducted paired *t*-test analyses comparing primary to secondary relationships within each relationship structure separately for each dependent variable.

### ***Differences by Primary/Secondary Status within Each Polyamorous Relationship Structure***

Irrespective of the polyamorous relationship structure, there were significant differences between primary and secondary relationships in terms of relationship secrecy, investment size, relationship acceptance from both family and friends, and proportion of time spent on sexual activity (Table 2). However, these differences were smaller among co-primary and non-primary

relationships than among primary-secondary relationships, as indicated by the smaller effect sizes (Table 2). All statistics can be found in the associated tables. We provide  $p$ -values and the effect size in the text below so readers can make inferences about them.

Unlike those within primary-secondary relationships, those in co-primary relationships reported similar levels of satisfaction ( $p = .590$ ,  $d = 0.03$ ) and commitment ( $p = .067$ ,  $d = 0.13$ ) between their primary and secondary relationships. Among those in non-primary relationships, there were still significant differences between levels of satisfaction and commitment between primary and secondary relationships, however, there was no significant difference in the quality of alternatives between these relationships ( $p = .207$ ,  $d = 0.08$ ).

### ***Comparisons between Monogamous, Primary, and Secondary Relationships***

Next, we compared monogamous relationships to primary and secondary relationships separately for each of the polyamorous relationship structures.

#### ***Primary-Secondary Relationships***

Participants in primary-secondary polyamorous relationships reported higher acceptance from friends, levels of satisfaction, quality of alternatives, commitment levels, and investment size with respect to their primary relationships than did monogamous participants (Table 3). The strongest difference was in the level of quality of alternatives between primary relationships and monogamous relationships ( $p < .001$ ,  $d = 0.88$ ); other differences were much smaller in effect size and they were generally weaker than the differences between primary and secondary relationships. There were no significant differences in the level of acceptance from family ( $p = .974$ ,  $d = 0.00$ ), relationship secrecy ( $p = .814$ ,  $d = 0.04$ ), and proportion of time spent on sexual activity ( $p = .119$ ,  $d = 0.10$ ) between primary relationships and monogamous relationships.

Unlike primary relationships, secondary relationships among participants in primary-secondary polyamorous relationships were significantly different from monogamous relationships on all outcomes (Table 4). Differences among secondary relationships and monogamous relationships were as strong as differences between primary and secondary relationships. Notable differences were found in levels of acceptance from family ( $p < .001$ ,  $d = 1.67$ ), investment size ( $p < .001$ ,  $d = 1.29$ ), and commitment level ( $p < .001$ ,  $d = 1.15$ ), all of which were lower for secondary relationships. Differences were also found in relationship secrecy ( $p < .001$ ,  $d = 1.24$ ) and quality of alternatives ( $p < .001$ ,  $d = 1.21$ ), which were higher in secondary relationships.

### ***Co-Primary Relationships***

Among those in co-primary relationships, pseudo-primary relationships were significantly higher in acceptance from friends ( $p < .001$ ,  $d = 0.24$ ), investment size ( $p < .001$ ,  $d = 0.27$ ), and quality of alternatives ( $p < .001$ ,  $d = 0.83$ ) than monogamous relationships (Table 3). On the other hand, there were no significant differences in the level of acceptance from family ( $p = .158$ ,  $d = 0.16$ ), relationship secrecy ( $p = .150$ ,  $d = 0.15$ ), relationship satisfaction ( $p = .688$ ,  $d = 0.04$ ), commitment ( $p = .688$ ,  $d = 0.07$ ), and proportion of time spent on sexual activity ( $p = .116$ ,  $d = 0.17$ ) for pseudo-primary relationships compared to monogamous relationships. Similar to primary-secondary relationships, the strongest difference was on quality of alternatives, although the strength of the differences for all characteristics was similar to differences between primary and secondary relationships within co-primary relationships.

Pseudo-secondary relationships within co-primary relationships had significantly lower levels of acceptance from family ( $p < .001$ ,  $d = 1.04$ ) and friends ( $p = .004$ ,  $d = 0.25$ ) and higher levels of secrecy ( $p < .001$ ,  $d = 1.14$ ), quality of alternatives ( $p < .001$ ,  $d = 0.55$ ) and proportion

of time spent on sexual activity ( $p = .004$ ;  $d = 0.26$ ) than monogamous relationships (see Table 4). Most of these differences were also found when secondary relationships from primary-secondary relationships were compared to monogamous relationships. Unlike primary-secondary relationships, pseudo-secondary relationships in co-primary configurations were not reported to have different levels of relationship satisfaction ( $p = .765$ ,  $d = 0.02$ ), commitment level ( $p = .258$ ,  $d = 0.08$ ) and investment size ( $p = .769$ ,  $d = 0.02$ ) compared to monogamous relationships (see Table 4). These results were also very similar to the lack of differences that were found when pseudo-primary and pseudo-secondary relationships within co-primary arrangements were compared.

### ***Non-Primary Relationships.***

Among participants who did not identify either of their partners as primary, pseudo-primary relationships were significantly higher in secrecy ( $p = .002$ ,  $d = 0.26$ ), quality of alternatives ( $p < .001$ ,  $d = 1.27$ ), and proportion of time spent on sexual activity ( $p < .001$ ,  $d = 0.26$ ) compared to monogamous relationships, and significantly lower in level of acceptance from family ( $p < .001$ ,  $d = 0.57$ ), investment size ( $p < .001$ ,  $d = 0.43$ ), quality of alternatives ( $p < .001$ ,  $d = 1.27$ ), and commitment ( $p < .001$ ,  $d = 0.33$ ). On the other hand, there were no significant differences in the level of acceptance from friends or in relationship satisfaction between pseudo-primary relationships and monogamous relationships ( $p = .135$ ). The largest difference between monogamous and pseudo-primary relationships was in quality of alternatives; differences between these relationships in all of the other outcomes were similar in size to the differences between pseudo-primary and pseudo-secondary relationships within non-primary relationships (see Table 3).

Similar to the results for primary-secondary relationships, pseudo-secondary relationships in non-primary configurations were significantly different than monogamous relationships on all outcomes, although the strength of the differences were much weaker, with only two notable exceptions where effect size was greater than one: relationship acceptance from family ( $p < .001$ ,  $d = 1.27$ ) and quality of alternatives ( $p < .001$ ,  $d = 1.15$ ) (see Table 4).

## DISCUSSION

Overall, among participants in relationships that rejected a primary-secondary hierarchy (non-primaries and co-primaries), pseudo-primary partners were more likely to be rated higher in acceptance and investment and reported lower secrecy and proportion of time spent on sex compared to pseudo-secondary partners; these differences were attenuated compared to those in a primary-secondary hierarchy. Unlike primary-secondary hierarchies, however, no significant differences were found in commitment and satisfaction levels between pseudo-primaries and pseudo-secondaries. Results indicated that relationships with primary and pseudo-primary partners across all polyamorous structures resembled relationships with a monogamous partner, whereas reports for secondary partners and pseudo-secondary partners were consistently lower than ratings for monogamous partners, with the exception of proportion of time spent on sex which was consistently higher among secondary partners regardless of primary status.

## STUDY 2

Study 2 was conducted to confirm the findings in Study 1 and to examine additional relevant characteristics across partners. We first sought to replicate the main effects (e.g., investment, secrecy, acceptance), as outlined in hypothesis 1 of Study 1, and confirm the strength of associations between these comparisons, as outlined in hypothesis 2. Furthermore, using this

additional dataset, we examined differences in other relevant outcomes, such as romantic attraction, passionate love, desired sexual frequency, and companionate love.

Passionate love refers to a state of intense desire for union with another person (Hatfield & Sprecher, 1986). Passionate love includes sexual desire, passion, excitement, and uncertainty (Berscheid, 2010). Other characteristics of passionate love are intense emotions, mutual attraction, sexual arousal, and engagement between two partners, as well as thought intrusion and jealousy (Acevedo & Aron, 2009). Research suggests that passionate love is correlated with satisfaction in both short- and long-term relationships (Acevedo & Aron, 2009; Tucker & Aron, 1993; Traupmann & Hatfield, 1981), although passion appears to decline over time (Blood & Wolfe, 1960; Glenn, 1990; Locke & Wallace, 1959; Tucker & Aron, 1993; Wojciszke, 2002). In other research relating to passion, researchers found a positive correlation between sexual frequency and passion (Costa & Brody, 2007), as well as a positive correlation between relationship passion and fun during sex (Rubin & Campbell, 2012). Passionate love and romantic attraction share similar characteristics; they both induce increased physiological arousal, sexual desire, desire for union, and attention focused on the partner (Fisher, 2004; Fisher, Aron, Mashek, Li, & Brown, 2002; Berscheid, 2010). Additionally, research has shown a positive correlation between passionate love, romantic attraction, and sexual desire (Appel & Shmuel, 2015; Diamond, 2004; Gonzaga, Turner, Keltner, Campos, & Altemus, 2006). More specifically, research suggests that passionate love, romantic attraction, and sexual desire serve to assist in the initiation of relationships, and face a time course constraint, such that decreases in these constructs occur over time as the relationship becomes more committed and established (see Gonzaga et al., 2006). Compared to passionate love, romantic attraction, and sexual desire, companionate love is much more stable, develops over time, and typically persists over time

(Hatfield, 1985; Hatfield & Sprecher, 1986; Kim & Hatfield, 2004). Companionate love is characterized by intimacy and commitment and is correlated with relationship satisfaction in the long term (Acevedo, & Aron, 2009). Passionate love, over time, is argued to develop into companionate love (Hatfield & Walster, 1978).

Importantly, in a previous unpublished study, we compared primary and secondary partners on these indices (see: <https://osf.io/uysmz/>) and found that participants reported greater romantic attraction, passionate love, and companionate love for the primary compared to secondary partner; we now seek to extend these findings by examining these differences within co-primary and non-primary relationships. Thus, we seek to reproduce these findings among primary-secondary partners and assess them among, and in comparison, to those in differing relationship structures. We hypothesized that results would be consistent with the differences we found between primary-secondary relationships. That is, primary relationships should involve greater romantic attraction, passionate love, and companionate love but lower desired sexual frequency (H4). Among those in co-primary and non-primary relationships, this effect may still be observed, although we hypothesized effects in these groups will be weaker (H5).

## METHOD

### *Sampling*

In 2017, a convenience sample of individuals in CNM relationships ( $N = 1,524$ ) was recruited from internet forums, dating sites and Facebook group pages in order to replicate and extend previous findings. Of the participants recruited, 1,279 identified as polyamorous and currently had at least one partner; 878 of these participants were in polyamorous relationships that could be classified as either primary-secondary ( $n = 392$ ), co-primary ( $n = 195$ ), or non-primary ( $n = 291$ ). Recruitment materials were identical to Study 1, although the studies were



conducted four years apart<sup>3</sup>. The inclusion criteria were the same across the studies, as was the informed consent procedure.

### *Participants*

The demographic information for the participants broken down by reported relationship structure can be found in Table 5. Overall, the majority of respondents identified as Caucasian (86.33%), heterosexual (30.64%) or bisexual (43.99%), and female (61.62%). The mean age ( $M_{\text{age}} = 33.41$ ,  $SD = 9.16$ , range 18- 82) indicated a tendency toward young and emerging adulthood (75% of sample were 18-35), but there was substantial variation.

### *Procedure*

Following the online informed consent procedure, participants completed the demographic items and were asked to list the initials of their current partners. Participants were then asked to complete various relationship measures that were included in Study 1 along with passionate love, companionate love, romantic attraction, and desired sexual frequency. As in Study 1, partners' initials were piped into the survey questions and instructions, and participants were asked to identify whether each partner was considered primary, with debriefing occurring upon completion of the surveys. The materials and procedure for this study were reviewed and approved by the local research ethics board before study initiation.

### *Measures*

The measures for relationship structure, primary/secondary status, relationship acceptance from family and friends (measured separately, one item each), romantic secrecy (primary/pseudo-primary relationship  $\alpha = .81$ , secondary/pseudo-secondary relationship  $\alpha = .88$ ), relationship satisfaction (primary/pseudo-primary relationship  $\alpha = .83$ , secondary/pseudo-

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<sup>3</sup> Note that some participants in Study 1 and Study 2 may have overlapped since we were unable to verify their identities for ethical reasons.

secondary relationship  $\alpha = .83$ ), investments (primary/pseudo-primary relationship  $\alpha = .85$ , secondary/pseudo-secondary relationship  $\alpha = .94$ ), quality of alternatives (primary/pseudo-primary relationship  $\alpha = .74$ , secondary/pseudo-secondary relationship  $\alpha = .84$ ), and commitment (primary/pseudo-primary relationship  $\alpha = .89$ , secondary/pseudo-secondary relationship  $\alpha = .92$ ), were the same as those used in Study 1.

### ***Romantic Attraction***

The Romantic Attraction Scale (Appel & Shulman, 2015) assesses the intensity of romantic attraction (e.g., “I spend much of the day thinking about moments with (X),” and “My feelings for (X) preoccupy me all the time”; primary/pseudo-primary relationship  $\alpha = .90$ , secondary/pseudo-secondary relationship  $\alpha = .94$ ). Possible responses were on a 7-point unipolar scale (1 = *not at all*, 7 = *strongly agrees*), and the eight items were mean aggregated, with higher scores indicating more romantic attraction.

### ***Passionate Love***

The Passionate Love Scale (PLS; Hatfield, & Sprecher, 1986) assesses the intensity of passionate love. Passionate love can be broken down into emotional components (e.g. “(X) is the person who can make me feel the happiest”), cognitive components (e.g. “Sometimes I feel I can’t control my thoughts; they are obsessively on (X)”), and behavioral components (e.g. “I eagerly look for signs indicating (X)’s desire for me”), or aggregated to create an overall score (primary/pseudo-primary relationship  $\alpha = .95$ , secondary/pseudo-secondary relationship  $\alpha = .96$ ). Possible responses were on a 9-point unipolar scale (1 = *not true at all*, 9 = *definitely true*), and for the current study, the 30 items were mean aggregated, with higher scores indicating more passionate love.

### ***Companionate Love***

The Companionate Love Scale (CLS; Hatfield, & Rapson, 2013) assesses the intensity of companionate love. Companionate love can be broken down into commitment (e.g. “I expect my love for (X) to last for the rest of my life.”) and intimacy (e.g. “I feel emotionally close to (X).”) or aggregated to create an overall score (primary/pseudo-primary relationship  $\alpha = .90$ , secondary/pseudo-secondary relationship  $\alpha = .92$ ). Possible responses were on a 9-point unipolar scale (1 = *not at all true of me*, 9 = *extremely true of me*) and the eight items were mean aggregated, with higher scores indicating more companionate love.

### ***Desired Sexual Activity***

Desired sexual activity was measured by asking participants how often they would like to engage in sexual activity with their partners (i.e., number of times in a week that they would like to engage in sexual activity). Participants were able to enter a numeric response with higher numbers indicating more desired sexual activity.

### ***Proportion of Time Spent on Sexual Activity***

Unlike Study 1, we did not ask participants the proportion of time spent on sex; however, this information was imputed with two different questions. Participants were asked to indicate the number of *hours per week* spent together with each partner, as well as the hours spent on sex. The proportion was calculated by dividing the hours of sexual activity with the hours spent together; when the hours spent on sexual activity exceeded the hours spent together, the response was assumed to be an error and was discarded from analyses. Importantly, Study 2 used a different measure to assess proportion of time spent on sex than Study 1, and when participants were asked to estimate the time spent together and time spent on sex and the calculations were derived from this information, time spent on sex resulted in lower estimates than were reported in Study 1 (see Table 2 and 6).

### *Analytic Plan*

Similar to Study 1, we began with split-plot ANOVAs to examine the effects of relationship structure and primary/secondary status, we then followed-up on all significant interactions using paired *t*-tests, and accompanying effect sizes.

## **RESULTS**

### *Validating Primary Status Index*

Similar to Study 1, participants were expected to list their more “primary” partner first, regardless of their relationship structure (co-primary or non-primary). The data supported this assumption, such that the first person listed was much more likely to be considered a primary partner (63.78%) than the second person listed (23.35%); McNemar  $\chi^2(1) = 378.75, p < .001$ . Similarly, participants reported a significantly longer relationship duration with the first person listed (6 years, 5 months) than with the second person listed (1 year, 9 months);  $t(1278) = 24.39, p < .001, d = 0.68$ . Furthermore, participants were more likely to share a household with the first partner listed (67.55%) than the second partner listed (17.05%); McNemar  $\chi^2(1) = 487.24, p < .001$ . When we restricted analyses to those who did not report a primary-secondary relationship structure, this pattern held. Lastly, the bivariate index consisting of cohabitation status and relationship length showed partners who were listed first scored higher than partners listed second. Thus, consistent with Study 1, most participants’ relationships could be classified as being more primary or secondary based on either the order in which they were listed in the survey, or the index that we constructed to differentiate between primary and secondary relationships.

### *Relationship Characteristics by Primary/Secondary Status and Relationship Structure*

Results from split-plot ANOVAs in Study 2 yielded similar results to Study 1. There were significant main-effects for relationship structure when we analyzed romantic secrecy,  $F(2, 1595) = 14.62, p < .001$ , acceptance from friends,  $F(2, 1592) = 13.27, p < .001$ , acceptance from family,  $F(2, 1591) = 3.31, p = .036$ , investment size,  $F(2, 1466) = 46.92, p < .001$ , relationship satisfaction,  $F(2, 1466) = 13.40, p < .001$ , commitment level,  $F(2, 1466) = 37.01, p < .001$ , passionate love,  $F(2, 1268) = 32.39, p < .001$ , companionate love,  $F(2, 1217) = 29.94, p < .001$ , and romantic attraction  $F(2, 1191) = 13.46, p < .001$ . However, quality of alternatives,  $F(2, 1466) = 1.24, p = .290$ , proportion of time spent on sex  $F(2, 621) = 2.46, p = 0.086$ , proportion of time spent on sex  $F(2, 821) = 2.19, p = .113$  and desired frequency of sex,  $F(2, 775) = .01, p = .990$ , did not significantly differ across relationship structures.

There were also significant main effects for primary/secondary status when we analyzed secrecy  $F(1, 1595) = 134.63, p < .001$ , acceptance from friends,  $F(1, 1592) = 9.16, p = .003$ , acceptance from family,  $F(1, 1591) = 94.14, p < .001$ , investment size,  $F(1, 1466) = 111.69, p < .001$ , relationship satisfaction,  $F(1, 1466) = 16.31, p < .001$ , commitment level,  $F(1, 1466) = 55.18, p < .001$ , companionate love,  $F(1, 1217) = 68.00, p < .001$ , romantic attraction  $F(2, 1191) = 6.70, p = .001$ , and proportion of time spent on sex  $F(1, 821) = 27.66, p < .001$ . By contrast, quality of alternatives,  $F(1, 1466) = 0.11, p = .737$ , and desired frequency of sex,  $F(1, 775) = 0.39, p = .526$ , were not significantly different across primary and secondary relationships.

Finally, we found significant interactions between relationship structure and primary/secondary status when we analyzed secrecy  $F(2, 1595) = 38.73, p < .001$ , acceptance from friends  $F(2, 1592) = 48.13, p < .001$ , acceptance from family,  $F(2, 1591) = 14.85, p < .001$ , investment size,  $F(2, 1466) = 61.70, p < .001$ , relationship satisfaction,  $F(2, 1466) = 29.19, p < .001$ , quality of alternatives,  $F(2, 1466) = 7.36, p < .001$ , commitment level,  $F(2, 1466) = 52.92,$

$p < .001$ , passionate love,  $F(2, 1268) = 30.43$ ,  $p < .001$ , companionate love,  $F(2, 1217) = 47.41$ ,  $p < .001$ , romantic attraction  $F(2, 1191) = 6.70$ ,  $p = .001$ , and proportion of time spent on sexual activity  $F(2, 821) = 9.68$ ,  $p < .001$ . There was no interaction when we analyzed the desired frequency of sex,  $F(2, 775) = 1.86$ ,  $p = .156$ .

### ***Discussion***

The majority of findings in Study 1 were confirmed with data from Study 2. Regardless of the relationship structure, there were clear differences between primary and secondary relationships in secrecy, investment size, commitment levels and relationship acceptance from family and friends. Differences were again smaller among participants in co-primary and non-primary relationships relative to those who in primary-secondary relationships.

In addition to confirming past findings, we also confirmed our expectations that primary relationships also tend to be rated higher in terms of passionate love, companionate love, and romantic attraction among those who are in primary-secondary relationships. The same pattern of findings was found among both co-primary and non-primary relationships, although effect sizes were again smaller relative to those in primary-secondary relationships (all  $d$ 's  $< 0.5$ ). There were also differences in passionate love and romantic attraction between primary and secondary relationships among participants in co-primary relationships, although differences were much weaker than those in primary-secondary relationships. Unlike the other two polyamorous relationship structures, those in non-primary relationships did not report differences between primary and secondary relationships in terms of passionate love ( $p = 1.000$ ,  $d = 0.06$ ) and romantic attraction ( $p = .336$ ,  $d = 0.12$ ) (see Table 6).

## GENERAL DISCUSSION

Research on polyamory has focused largely on primary-secondary relationships rather than examining relationship dynamics in other, non-hierarchical forms of polyamorous relationships. Researchers have noted that *some* individuals in polyamorous relationships reject the primary-secondary arrangements (DeLamater & Plante, 2015) and have suggested that at least two other configurations exist (Labriola, 2003). These distinctions are corroborated by our data, such that some individuals identify distinct primary and secondary relationships, others consider all of their partners to be primary, and yet others consider no partners to be primary. While there are certainly differences between these polyamorous relationship structures, our findings indicate that established differences between primary and secondary relationships among people who explicitly recognize such distinctions generalize to those in co-primary and non-primary polyamorous relationships in most cases. On the basis of this evidence, it would appear that despite attempts towards equality, some relationship perceptions differ, even among partners who strive to maintain non-hierarchical relationships.

### *Comparisons Among Primary-Secondary, Co-Primary and Non-Primary Partners*

Some polyamorists organize their relationships by emotional importance (Labriola, 2003; Sheff, 2005) with primary partners being similar to a spouse in a monogamous relationship. In these relationships, primary partners often cohabit, make important decisions together, receive external social recognition as a couple (often including legal marriage), and experience commensurately less stigmatization (e.g., greater acceptance). Often, secondary partners' involvement and role in the relationship may be more comparable to a boyfriend or girlfriend in that they are less likely to cohabit and share finances, while also having lower acceptance from friends and family. Congruent with this characterization, our results suggest passionate

love, companionate love, romantic attraction and desired sexual activity were higher for primary compared to secondary partners within these relationships. Our results therefore indicate that relationships with primary and secondary partners differ in meaningful ways.

Among those in relationships with two concurrent primary partners (co-primaries), results were in some cases consistent with primary-secondary findings, such that relationship acceptance from family and friends and investment size was higher for reports of pseudo-primary than pseudo-secondary relationships, while proportion of time spent on sex was higher in relationships with pseudo-secondary partners compared to pseudo-primary partners. However, results pertaining to differences in quality of alternatives, commitment, and satisfaction were less comparable to findings for primary-secondary relationships. Although no research to date has assessed relationship outcomes among individuals in co-primary relationships, Labriola (2003) has asserted that a key factor for co-primary relationships is that all members are equal partners. Instead of a couple having priority and control in the relationship, all relationships are considered primary or have the potential of becoming primary, and thus are afforded equal opportunity. Although not explicitly assessed in the current study, this assertion would suggest that each partner has equal power to negotiate what they want in the relationship in terms of time, commitment, living situation, financial arrangements, sex, and other needs. Our results suggest that while relationships within co-primary structures still differ with regards to interdependence processes (e.g., investment, commitment, acceptance and secrecy), and sexual activity (time spent having sex, desired time spent on sex), the effect sizes between pseudo-primary and secondary partners were substantially smaller than those found for primary-secondary assigned partners on several psychologically meaningful indicators of relationship quality (e.g., commitment and satisfaction). This evidence is consistent with Labriola's (2003) claim that



individuals with multiple primary partners are striving towards equality, although from our view, the success of such striving may be limited by a social reality that enforces dyadic relationships as the norm.

Among those in non-primary relationships, results were in most cases consistent with primary-secondary findings. Specifically, such individuals reported higher acceptance from family and friends, investment size, relationship satisfaction (not significant in Study 2), commitment, and companionate love in their pseudo-primary relationships than in their pseudo-secondary relationships, while the proportion of time spent on sex was higher among pseudo-secondary partners. Across both studies, perceptions of quality of alternatives, romantic attraction, and desired sexual activity did not differ among multiple non-primary partners. Despite the similarity of these results with previous findings for primary-secondary relationships, most differences between relationships among participants in non-primary relationships were smaller in magnitude. Labriola (2003) theorized individuals with multiple non-primary partners are not looking for committed relationships and are essentially seeking intimacy, love, and sexual satisfaction without the constraints of a primary relationship. Our results may speak to this in some sense, such that differences across pseudo-primary and -secondary relationships were the smallest in multiple non-primary relationships and commitment was lower in these relationships than commitment in primary-secondary relationships, co-primary relationships, and monogamous relationships.

While our findings confirm that a large portion of polyamorous individuals consider their partners to be either co-primary or non-primary, some relationship differences inevitably exist, especially those that have to do with tangible resources (e.g., investments), stigma and stigma management (e.g., acceptance and secrecy), and sexuality (e.g., proportion of time spent on sex).

Based on findings for co-primary and non-primary partners, it seems that personally identified relationship configurations (e.g., co-primary, non-primary) are at times better represented by an ideology or an ideal approach to hierarchy in relationships, though differences may still emerge especially with structural outcomes that are subject to societal norms, such as one's perception of acceptance from friends and family. More specifically, people who report their partners to be co-primary or non-primary seek to afford their relationships equal opportunities and importance or may reject assigning partners with labels that are associated with primary status, as can be seen in relatively equal levels of satisfaction across partners. However, they may still be constrained by a limited amount of total resources (e.g., time, money, etc.) and by societal stigma in ways that are similar to relationships in which people explicitly identify primary and secondary roles.

### ***Limitations***

The present study has multiple strengths, including the fact that both studies employed large samples and included comparisons among various relationship configurations (something that, to our knowledge, has not previously been attempted in the empirical literature on polyamory). However, this work is not without limitations. First, all of the data collected were correlational in nature. Therefore, no definitive statements about causality can be made. Furthermore, we can only speculate about *why* differences among pseudo-primary and pseudo-secondary partners in co-primary and non-primary relationships emerged. It could be that it is difficult to equally allocate resources and time among partners, and thus despite one's relationship configuration, differences may inevitably emerge among partners. Alternatively, perhaps differences emerged because of proximity or one's other relationships (e.g., pseudo-secondary partners may be more likely to have their own primary partner). These questions and others cannot be assessed with the current data but are of great interest. Longitudinal approaches

to studying differences among the various polyamorous configurations would be particularly useful to address this limitation, in addition to including polyamorous participants' partners and information about their relationship configuration with other partners. It would also be ideal to include questions about hierarchy and agreements in relationships to assess how relationship structures differ in how they approach their relationships (e.g., do individuals in co-primary and non-primary relationships make fewer agreements with partners, do they actually perceive their partners as equal or report simply affording equal opportunities?). Finally, one may also examine if primary statuses shift over time because it is currently unknown if one identifies a primary at the early stages of a relationship, or if as the relationship grows stronger, a secondary or non-primary turn into a primary relationship.

Second, although the samples of polyamorous participants collected in both studies were relatively diverse and respectable in size, they were both collected focusing on recruitment of polyamorous participants specifically. In some emerging research, CNM groups (including polyamory, but also open and swinging relationships) were surprisingly similar in their sexual attitudes, sociosexuality and reports of erotophobia (Balzarini, Shumlich, Kohut, & Campbell, 2018). Given the fact that the shared core of CNM relationships appears to have a similar outlook on relationships, commitment, and sexual behaviors, it is important for researchers to explore CNM relationships beyond polyamory. Moreover, the aforementioned work focuses on sexual attitudes rather than relationship variables; thus, similarities among CNM groups may exist in some domains, such as among their sexual attitudes, but may differ in others, such as among relationship dynamics. We would speculate that because polyamorous relationships often consist of multiple romantic commitments, whereas open and swinging relationships are more often characterized by a couple that seeks out extradyadic sex to varying degrees, any potential

differences among two concurrent partners in open and swinging relationships will be more inclined to fall into the primary-secondary model, and differences among primary and secondary partners may be more drastic. Future research should test the documented effects of relationship outcomes across different types of CNM relationships in order to determine whether the same pattern of associations remains.

### ***Implications***

The results of these studies indicate some commonalities in relationship differences that appear to be relatively universal across different polyamorous configurations but also reveal conceptually important differences between primary-secondary, co-primary, and non-primary relationships. Given these findings, it would seem that researchers interested in examining relationship processes across partners in polyamorous relationships should carefully consider how relationship structures, including elements that are both explicitly endorsed (e.g. primary-secondary, co-primary, non-primary) and those that may be imposed by finite resource allocation (e.g., cohabitation, marital status, etc.), may moderate, or potentially confound questions of interest in their research. This is especially important given that a non-trivial number of polyamorists consider their relationships to be co-primary or non-primary.

Continuing to overlook co-primary and non-primary relationships may also contribute to a misguided and somewhat mononormative view that within all multiple simultaneous relationships, one partner must be afforded more status, privilege or importance than the other(s). While our results certainly indicate that differences exist between relationships among partners in non-hierarchical relationships that are similar to those found in primary-secondary relationships, we believe that it is important to stress that these differences were much diminished in co-primary and non-primary relationships compared to primary-secondary

relationships. We see this as potential evidence that some polyamorous relationships can be more equitable than others, at least within the confines of a society that is not particularly tolerant of such relationships.

Our findings may also be important for clinicians. Previous research has shown that individuals in polyamorous relationships believe that therapists have little understanding of the dynamics involved in their relationships (Johnson, 2013; Weitzman, 2006), that therapists enact microaggressions against CNM clients (Kolmes & Witherspoon, 2012), and that inappropriate practices impede therapeutic relationships resulting in early termination (Heath, Sakaluk, & Moors, 2018). A research base that overly focuses on the relationship differences in primary and secondary arrangements may be contributing to these problems, even among clinicians that are relatively tolerant of CNM relationships. An improved understanding of how the dynamics of relationship quality vary across different polyamorous relationship structures may help clinicians avoid the mischaracterization of polyamorous clients' relationships, ultimately improving the quality of care provided.

### ***Concluding Remarks***

Polyamory is gaining societal popularity and interest as a potential relationship alternative to monogamy (Barker & Langridge, 2010; Moors, 2016) and social scientists are increasingly interested in the study of it. However, extant research has focused on assessing relationship outcomes among individuals who consider one partner to be primary and the other to be secondary, despite other common and important relationship configurations. Our findings revealed that approximately 38% of polyamorous participants considered their relationship among two concurrent partners to be either co-primary or non-primary in a dataset collected in 2013, compared to 55% of participants in a dataset collected in 2017. Thus, nearly half of our

sample rejected the classification of primary-secondary status for their partners. Our findings suggest that despite attempts at equality, many relationship qualities differ among partners in non-hierarchical relationships similar to the differences that emerge for those who make formal primary-secondary partner classifications.

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Table 1.

*Demographic Information for Participants in Study 1*

	Overall ( <i>N</i> = 3,455)	Monogamous ( <i>N</i> = 1,358)	Primary-Secondary ( <i>N</i> = 1,308; 62.7% <sup>a</sup> )	Co-Primary ( <i>N</i> = 399; 19.1% <sup>a</sup> )	Non-Primary ( <i>N</i> = 390; 18.7% <sup>a</sup> )
Age ( <i>M</i> Years)	33.59	31.42	35.26	35.42	32.98
Gender – <i>n</i> (%)					
Male	1,111 (33.56)	368 (30.3)	481 (36.8)	125 (31.3)	137 (35.2)
Female	2,043 (61.72)	831 (68.3)	766 (58.7)	244 (61.2)	202 (51.9)
Transgender	37 (1.12)	5 (0.41)	13 (1.0)	6 (1.5)	13 (3.3)
Other	119 (3.60)	12 (0.99)	46 (3.5)	24 (6.0)	37 (9.5)
Race*					
African	59 (1.65)	22 (1.7)	23 (1.6)	5 (1.1)	9 (2.1)
Asian	114 (3.2)	72 (5.6)	28 (2.0)	9 (2.0)	5 (1.2)
Hispanic	138 (3.9)	39 (3.1)	66 (4.6)	16 (3.6)	17 (4.0)
Native	88 (2.5)	15 (1.2)	40 (2.8)	17 (3.9)	16 (3.7)
Pacific Islander	14 (0.39)	5 (0.39)	7 (0.49)	1 (0.23)	1 (0.23)
White	2,920 (81.5)	1,046 (81.7)	1,172 (81.8)	363 (82.3)	339 (78.8)
Multi-racial	160 (4.5)	51 (4.0)	63 (4.4)	18 (4.1)	28 (6.5)
Other	91 (2.5)	30 (2.3)	34 (2.4)	12 (2.7)	15 (3.5)
Sexual Orientation					
Heterosexual	1,685 (51.0)	926 (76.2)	510 (39.1)	118 (29.6)	131 (33.7)
Lesbian / Gay	115 (3.5)	55 (4.5)	36 (2.7)	13 (3.3)	11 (2.8)
Bisexual	870 (26.3)	162 (13.3)	451 (34.6)	159 (39.9)	98 (25.2)
Pansexual	435 (13.2)	40 (3.3)	216 (16.6)	82 (20.6)	97 (24.9)
Other	203 (6.1)	32 (2.6)	92 (7.0)	27 (6.8)	52 (13.37)

*Note:* \* indicates the column may add up to more than the total, since participants can select more than one option. Others may not add up to totals due to missing data.

a. percentages shown were calculated within the polyamorous group

Table 2.

*Comparison of Polyamorous Relationship Configurations – Study 1*

Variable	Primary-Secondary Relationship					Co-Primary Relationship					Non-Primary				
	P1	P2	<i>n</i>	<i>t</i>	<i>d</i>	P1	P2	<i>n</i>	<i>t</i>	<i>d</i>	P1	P2	<i>N</i>	<i>t</i>	<i>d</i>
Family Acceptance	7.95 (1.87)	4.29 (2.45)	868	36.40***	1.24	7.66 (2.11)	5.74 (2.76)	288	9.93***	0.58	6.83 (2.41)	5.40 (2.50)	249	8.25***	0.52
Friends Acceptance	8.45 (1.18)	6.28 (2.25)	872	27.20***	0.92	8.40 (1.18)	7.67 (1.76)	287	6.62***	0.39	8.08 (1.38)	7.16 (2.02)	251	6.96***	0.44
Relationship Secrecy	1.92 (1.81)	5.29 (3.11)	875	-30.89***	1.04	2.30 (2.32)	4.71 (3.20)	288	-11.69***	0.69	2.58 (2.52)	3.95 (3.10)	253	-7.25***	0.46
Investment Size	7.90 (1.24)	5.15 (2.03)	875	39.00***	1.32	7.82 (1.18)	7.42 (1.53)	289	4.75***	0.28	6.80 (1.85)	6.04 (2.05)	253	6.13***	0.39
Relationship Satisfaction	7.80 (1.30)	6.40 (1.56)	875	21.41***	0.72	7.41 (1.57)	7.48 (1.56)	289	-0.54	0.03	7.25 (1.36)	6.77 (1.66)	252	3.88***	0.24
Quality of Alternatives	5.92 (1.69)	6.44 (1.59)	874	-10.01***	0.34	5.89 (1.77)	5.41 (1.96)	289	5.28***	0.31	6.57 (1.42)	6.48 (1.75)	251	1.26	0.08
Commitment Level	8.54 (0.94)	6.31 (1.94)	874	33.20***	1.12	8.33 (1.18)	8.13 (1.37)	289	2.14	0.13	7.80 (1.57)	7.02 (1.88)	252	6.37***	0.40
Proportion of Sex	20.74 (21.11)	37.11 (27.48)	860	-14.09***	0.48	19.48 (21.21)	27.47 (22.10)	275	-5.37***	0.32	28.03 (22.22)	32.03 (24.35)	253	-2.31*	0.14

*Note:* The Mean (SD) is reported for partner 1 and partner 2. P1 = partner 1; P2 = partner 2.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; All  $p$ 's are adjusted with the Holm-Bonferonni adjustments within each subgroup

Table 3.

*Comparing Monogamous Partners with Partner 1 of Polyamorous Participants – Study 1*

Variable	<i>Monogamous</i>		<i>Primary-Secondary Relationship</i>				<i>Co-primary Relationship</i>				<i>Non-Primary</i>			
	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>t</i>	<i>d</i>	<i>M (SD)</i>	<i>n</i>	<i>t</i>	<i>d</i>	<i>M (SD)</i>	<i>n</i>	<i>t</i>	<i>d</i>
Family Acceptance	7.93 (1.75)	683	7.93 (1.89)	883	0.032	0.00	7.63 (2.15)	291	-2.09	0.16	6.83 (2.40)	259	-6.74***	0.57
Friends Acceptance	8.07 (1.49)	685	8.45 (1.18)	885	5.44***	0.29	8.41 (1.18)	290	3.72***	0.24	8.06 (1.39)	261	-0.15	0.01
Relationship Secrecy	2.01 (1.90)	685	1.93 (1.83)	887	-0.83	0.04	2.32 (2.34)	290	1.97	0.15	2.55 (2.49)	261	3.13**	0.26
Investment Size	7.45 (1.39)	686	7.89 (1.24)	886	6.58***	0.34	7.81 (1.20)	291	4.14***	0.27	6.79 (1.84)	260	-5.24***	0.43
Relationship Satisfaction	7.45 (1.47)	684	7.80 (1.30)	886	4.98***	0.25	7.39 (1.58)	291	-0.49	0.04	7.26 (1.35)	261	-1.83	0.13
Quality of Alternatives	4.36 (1.86)	686	5.92 (1.69)	886	17.14***	0.88	5.89 (1.77)	291	12.14***	0.83	6.59 (1.42)	261	19.70***	1.27
Commitment Level	8.23 (1.24)	685	8.53 (0.96)	886	5.11***	0.27	8.32 (1.20)	291	0.95	0.07	7.80 (1.56)	261	-4.06***	0.33
Proportion of Sex	22.78 (17.87)	736	20.86 (21.11)	919	-2.06	0.10	19.56 (21.13)	285	-2.28	0.17	27.81 (22.19)	266	3.33**	0.26

*Note:* The Mean (SD) is reported for partner 1 and partner 2.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; All  $p$ 's are adjusted with the Holm-Bonferonni adjustments within each subgroup

Table 4.

*Comparing Monogamous Partners with P2 of Polyamorous Participants – Study 1*

Variable	<i>Monogamous</i>		<i>Primary-Secondary Relationship</i>				<i>Co-primary Relationship</i>				<i>Non-Primary</i>			
	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>t</i>	<i>d</i>	<i>M (SD)</i>	<i>n</i>	<i>t</i>	<i>d</i>	<i>M (SD)</i>	<i>n</i>	<i>t</i>	<i>d</i>
Family Acceptance	7.93 (1.75)	683	4.30 (2.45)	869	-34.04***	1.67	5.74 (2.76)	288	-12.46***	1.04	5.42 (2.51)	250	-14.58***	1.27
Friends Acceptance	8.07 (1.49)	685	6.28 (2.25)	872	-18.86***	0.92	7.67 (1.76)	287	-3.38**	0.25	7.16 (2.02)	251	-6.57***	0.56
Relationship Secrecy	2.01 (1.90)	685	5.29 (3.11)	875	25.64***	1.24	4.71 (3.20)	288	13.34***	1.14	3.95 (3.10)	253	9.32***	0.85
Investment Size	7.45 (1.39)	686	5.15 (2.03)	875	-26.47***	1.29	7.42 (1.53)	289	-0.29	0.02	6.04 (2.05)	253	-10.10***	0.88
Relationship Satisfaction	7.45 (1.47)	684	6.40 (1.56)	875	-13.59***	0.69	7.48 (1.56)	289	0.30	0.02	6.77 (1.66)	252	-5.65***	0.44
Quality of Alternatives	4.36 (1.86)	686	6.44 (1.60)	875	23.24***	1.21	5.41 (1.96)	289	7.72***	0.55	6.48 (1.75)	251	16.12***	1.15
Commitment Level	8.23 (1.24)	685	6.31 (1.94)	874	-23.79***	1.15	8.13 (1.37)	289	-1.13	0.08	7.02 (1.88)	252	-9.55***	0.84
Proportion of Sex	22.78 (17.87)	736	37.15 (27.46)	876	12.63***	0.61	27.71 (22.29)	287	3.35**	0.26	31.63 (24.12)	264	5.45***	0.45

*Note:* The Mean (SD) is reported for partner 1 and partner 2.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; All  $p$ 's are adjusted with the Holm-Bonferroni adjustments within each subgroup

Table 5.

*Demographic Information for Participants in Study 2*

	Overall ( <i>N</i> = 878)	Primary-Secondary ( <i>N</i> = 392)	Co-Primary ( <i>N</i> = 195)	Non-Primary ( <i>N</i> = 291)
Age (Mean Years)	33.41	33.09	33.70	32.30
Gender Identity				
Female	541 (61.6)	264 (67.4)	115 (59.0)	162 (55.7)
Male	211 (24.0)	91 (23.2)	55 (28.2)	65 (22.3)
Gender-queer/Non-binary	86 (9.8)	22 (5.6)	17 (8.7)	47 (16.2)
Agender	17 (1.9)	7 (1.8)	4 (2.1)	6 (2.1)
Other	23 (2.6)	8 (2.0)	4 (2.1)	11 (3.8)
Race				
Native American	5 (0.57)	3 (0.8)	1 (0.51)	1 (0.34)
Asian	17 (1.9)	10 (2.6)	5 (2.6)	2 (0.69)
African American	21 (2.4)	8 (2.0)	7 (3.6)	6 (2.1)
White	758 (86.4)	347 (88.5)	165 (84.6)	246 (84.8)
Hispanic	15 (1.7)	1 (0.3)	6 (3.1)	8 (2.8)
Native Hawaiian or Other Pacific Islander	2 (0.2)	1 (0.3)	0 (0.00)	1 (0.3)
Multi-Racial	39 (4.5)	13 (3.3)	9 (4.6)	17 (5.9)
Other	20 (2.3)	9 (2.3)	2 (1.0)	9 (3.1)
Sexual Orientation				
Heterosexual	269 (30.6)	135 (34.4)	61 (31.3)	73 (25.1)
Lesbian / Gay	24 (2.7)	10 (2.6)	8 (4.1)	6 (2.1)
Bisexual	381 (43.4)	176 (44.9)	88 (45.1)	117 (40.2)
Asexual	8 (0.9)	5 (1.2)	2 (1.0)	1 (0.3)
Other	196 (22.3)	66 (16.8)	36 (18.5)	94 (32.3)

*Note:* \* May not add up to totals due to missing data.

Table 6.

*Comparisons of relationship outcomes between P1 and P2 for Primary-Secondary, Co-Primary, and Non-Primary Participants – Study 2*

Variable	Primary-Secondary Relationship					Co-Primary Relationship					Non-Primary				
	P1	P2	n	t	d	P1	P2	n	t	d	P1	P2	n	t	d
Family Acceptance	7.84 (2.23)	4.58 (2.39)	348	20.73***	1.11	7.69 (2.30)	5.45 (2.53)	173	10.07***	0.77	7.41 (2.27)	5.58 (2.61)	267	10.35***	0.63
Friends Acceptance	8.35 (1.75)	6.88 (2.09)	349	10.53***	0.56	8.45 (1.49)	7.69 (1.69)	173	4.76***	0.36	8.28 (1.71)	7.90 (1.71)	267	3.41**	0.21
Relationship Secrecy	1.63 (1.62)	5.35 (3.00)	351	-21.49***	1.14	1.76 (1.90)	4.58 (3.07)	173	-11.40***	0.87	2.05 (2.05)	3.35 (2.75)	266	-7.27***	0.45
Investment Size	8.28 (1.10)	5.36 (2.16)	322	23.55***	1.31	8.20 (1.21)	7.43 (1.63)	162	6.58***	0.52	7.11 (1.90)	6.23 (2.19)	246	7.07***	0.45
Relationship Satisfaction	7.89 (1.37)	6.67 (1.46)	322	11.60***	0.65	7.64 (1.31)	7.68 (1.26)	162	-0.27	0.02	7.20 (1.61)	7.10 (1.45)	246	0.90	0.06
Quality of Alternatives	5.74 (1.61)	6.22 (1.58)	322	-5.85***	0.33	5.95 (1.60)	5.72 (1.77)	162	1.98	0.16	5.95 (1.64)	5.79 (1.79)	246	2.16	0.14
Commitment Level	8.57 (0.95)	6.56 (1.79)	322	19.08***	1.06	8.53 (0.82)	8.16 (1.23)	162	3.92***	0.31	7.82 (1.61)	7.34 (1.74)	246	4.10***	0.26
Passionate love scale	6.64 (1.36)	5.56 (1.64)	280	9.51***	0.57	6.53 (1.28)	6.90 (1.34)	142	-2.87*	0.24	5.74 (1.52)	5.86 (1.69)	208	-0.92	0.06
Companionate Love	8.32 (1.06)	6.19 (1.78)	275	18.67**	1.13	8.29 (0.90)	7.79 (1.21)	139	4.71**	0.40	7.57 (1.54)	7.06 (1.74)	197	3.78**	0.27
Romantic Attraction	3.53 (1.44)	3.25 (1.67)	268	2.54**	0.15	3.41 (1.31)	3.91 (1.65)	137	-3.62**	0.31	2.94 (1.41)	3.15 (1.63)	194	-1.74	0.12
Desired Sexual Activity	3.53 (2.67)	2.68 (2.19)	135	3.33**	0.29	3.23 (2.35)	3.89 (2.95)	73	-1.63	0.19	3.15 (3.15)	4.20 (11.26)	78	-0.87	0.10
Proportion of Sex	7.26 (9.83)	26.65 (24.26)	145	-9.45***	0.78	8.48 (13.36)	18.11 (18.43)	83	-4.26***	0.47	11.51 (16.02)	19.38 (21.14)	70	-3.43***	0.39

*Note:* The Mean (SD) is reported for partner 1 and partner 2.\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; All  $p$ 's are adjusted with the Holm-Bonferroni adjustments within each subgroup