

Objectification in Action: SEM Supplement

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### Abstract

Objectification theory is a valuable framework for conceptualizing the psychological consequences of being female within a society that sexually objectifies the female body, and considering the ways in which girls and women are acculturated to then internalize an observer's perspective as a primary view of their appearance. Empirical evidence has largely elucidated links between objectification, self-objectification, and negative outcomes for woman within interpersonal interactions between male-female pairs particularly. The purpose of the present study was to extend past research and consider the relationships between such valuable phenomena and their effects on authenticity within interactions between female pairs. Women were brought into the laboratory and interacted in same-sex dyads. Dyadic analysis was utilized to detect whether partners' objectification of each other affected state self-objectification, and the resulting feelings of comfort and authenticity during the interaction. After the interaction, participants completed a questionnaire which measured many constructs including cognitive performance, career aspirations, and relationship agency. Results revealed no significant relationship between self-objectification and authenticity. Further, although there were significantly negative effects on career aspirations and relationship agency resulting from a lack of relationship authenticity, there was no evidence that this is due to feelings of sexual objectification. The significant partner effect of objectification on actor self-objectification suggests that women being objectified by other women still results in feelings of self-objectification, and such research has powerful implications for the ways that women interact in both sexual and non-sexual settings.

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### Introduction

Theorists across diverse disciplines have explored the multiple ways that the body conveys social meaning, as well as how these meanings shape gendered experiences and therefore inform individuals' thinking, feeling, and behavior, especially during interpersonal interactions with members of different social groups ("Engendered lives," 1993). Empirical evidence illustrates how women, in particular, continue to be objects of perpetual discrimination as a result of psychosocial markers, like gender, that produce modes through which their identity is understood (Swim, Hyers, Cohen, & Ferguson, 2001). Objectification theory, a valuable theoretical framework proposed by Barbara L Fredrickson and Roberts (1997) which works to contextualize female bodies as socio-cultural constructions, can be employed to illuminate the gender oppression and negative lived experiences of girls and women. Additionally, one of the most detrimental forms of discrimination against them is thought to be the process by which their whole being is viewed as a collection of sexualized body parts valued predominantly for commodification, a phenomena termed sexual objectification (Bartky, 1990). Sexual objectification occurs with both "endless variety and monotonous similarity," and is thus mediated by unique combinations of race, ethnicity, sexuality, age, and class (Barbara L. Fredrickson, Hendler, Nilsen, O'Barr, & Roberts, 2011; Rubin, 1975, cited in Fraser and Nicholson (1989), p. 28). Amid such heterogeneity though, "having a reproductively mature female body" proposed by Barbara L Fredrickson and Roberts (1997) is likely to create a shared vulnerability to sexual objectification and a variety of shared negative experiences as a result. Studies have shown that within social encounters women are gazed at more than men (Briton & Hall, 1995), often times feel "looked at" within interpersonal interactions (Argyle & Williams, 1969), and will more than likely internalize the objectifying gaze on physical self (Young, 1979). Moreover, perhaps the most adverse effect of objectifying treatment is that it effectively socializes girls and women

to treat themselves as objects to be looked at and evaluated, an effect termed self-objectification (Bartky, 1990; Berger, Cohen, & Zelditch Jr, 1972; Barbara L Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). Self-objectification is a multidimensional process that accounts for the cognitive mechanism that translates experiences of sexualization at the cultural level to psychological (e.g., anxiety, self-esteem, authenticity, motivational states) and behavioral (cognitive performance, body monitoring) features of mental health and well-being at the individual level (Calogero, Tantleff-Dunn, & Thompson, 2011; Moradi & Huang, 2008). Calogero et al. (2011) proposes that the construct of self-objectification can be conceptualized as a learned trait. Furthermore, it can also be elicited momentarily, through the media, for example, with sexualized images in movies and magazines, which can lead to a state of self-objectification (Calogero et al., 2011, Moradi and Huang (2008)). Being objectified by another person and possessing trait-level self-objectification (TSO) may interact to influence experiences of feeling like a body, or state self-objectification (SSO). In the current work, we sought to examine what occurs during an interaction in which one or both partners are objectifying each other, similarly to Garcia, Earnshaw, and Quinn (2016), but between same-sex female interpersonal interactions. We predicted that being objectified by one's interaction partner would lead to self-objectification, in addition to modified feelings of authenticity in postinteraction outcomes, including feelings of agency in romantic relationships, career aspiration, and cognitive performance (D. M. Quinn, Chaudoir, & Kallen, 2011). Empirical evidence reveals that objectification manifests through inauthenticity in romantic relationships (Brunell et al., 2010), adverse attitudes in regard to career aspirations, and a decrease in concentration and impairment in female cognitive performance (Swim et al., 2001). Moreover, it was the goal of this research to empirically explore the role of interaction authenticity in objectification by utilizing a structural equation modeling to examine the effects for both women simultaneously. We expected to replicate the results found in the previous Garcia et al. (2016) study. More specifically, we expected to find a positive relationship between state-other objectification and self-state objectification,

and a resulting negative relationship between self-state objectification and interaction authenticity. Finally, we expected there to be a positive relationship between interaction authenticity and cognitive performance, relationship agency, and career aspirations.

## Methods

### Procedure

The procedure used was identical to that in Garcia et al. (2016), except for the instructions that the participants were given. In brief, that methodology is that each participant arrived at the laboratory and were then led into separate cubicles to prevent any communication between the participants before the interaction. In addition, each participant was screened for prior acquaintance to confirm that they had not met prior to the study. They were asked to sign the consent form to participate, and the study was described as follows: “This is a study looking at how students form different types of relationships at college.” A prompt on the computer screen told the participants that they were assigned to the “College Relationships” condition and gave the following instructions:

There are many types of relationships people form in college. During the interaction, please think about your partner’s potential as a romantic partner. Even if they are not the gender you are attracted to, you can still judge their potential as a romantic partner. After the interaction you will be asked to evaluate how dateable your partner is. In other words, we would like to know if you think someone would date your interaction partner. Also, your interaction partner will be evaluating you in the same manner.

Two participants were then brought into a larger interaction room where they sat on stools prearranged to be 36 inches apart. The experimenter instructed the participants to “get to know each other” for 10 minutes and then left the room. After 10 minutes, the experimenter came back into the room and stopped the interaction. The participants then

went back to their individual cubicles and completed a set of post-interaction measures. Participants were then thanked for their participation and debriefed Garcia et al. (2016). The full methodology used is found in Garcia et al. (2016)'s study.

## **Combining Samples**

Data from two different samples were used for this study and are discussed below. In the measures section that follows we refer to them as Sample 1 and Sample 2. Sample 1 is from a co-ed liberal arts college in the northeast and Sample 2 is from a women's liberal arts college in the northeast.

## **Post interaction Measures**

The following measures were collected in the order they are presented following the interaction. Correlations appear in Table 1, and descriptive statistics appear in Table 2.

**Cognitive Performance.** Trigrams from the Remote Associates Task (McFarlin & Blascovich, 1984) were utilized to assess cognitive performance after the interaction. Ten items were selected and presented to participants. For example, the correct answer for the trigram "Quack: Pond: Waddle" would be "Duck". Participants are limited to 30 seconds. For every correct answer, 1 point is given. The mean score was 5.03 ( $SD = 2.29$ ). Cognitive performance was measured first in order to measure potential immediate detriments to performance (Garcia et al., 2016).

**State Other-Objectification.** To measure the participant's objectification of their partner in the interaction, participants were asked a series of questions about the frequency of thoughts in relation to multiple characteristics of their partner Garcia et al. (2016). Questions included aspects of their partner's internal traits such as personality, friends, family, and extracurricular interests, as well as external traits such as body, appearance,

clothing, and body parts. All questions were to be rated on a scale from 1 (not at all) to 7 (constantly). Objectification was measured by getting the difference between the average frequency of thought about their partner's external traits ( $\alpha = 0.79$  for Sample 1,  $\alpha = 0.79$  for Sample 2) and frequency of thought about their partner's internal traits ( $\alpha = 0.79$  for Sample 1,  $\alpha = 0.76$  for Sample 2). A positive score in this scale would indicate that the participant thought about their partner's external traits more than the partner's internal traits, and a negative score would indicate the opposite.

**Interaction Authenticity.** To assess the magnitude to which individuals felt comfortable in the interaction and perceived the interaction to be authentic, we asked participants to rate the extent to which they felt comfortable, happy, friendly, warm, easygoing, sincere, and authentic on a scale ranging from 1 (not at all) to 7 (very much), much alike (Garcia et al., 2016). Participants were additionally asked to rate their interaction partner's authenticity as well as their own: “Do you think your partner was authentic during your interaction?” and “Were you authentic during your interaction?” These questions were ranked on a scale from 1 (not authentic at all). These were combined to form the authenticity scale ( $\alpha = 0.91$  for Sample 1,  $\alpha = 0.91$  for Sample 2).

**State Self-Objectification.** To assess state self-objectification, we used an average of two items from Saguy, Quinn, F Dovidio, and Pratto (2010) that were also used in Garcia et al. (2016). Participants were asked to rank how much they agreed with the following statements: “During the interaction I felt more like a body than a full self” and “I felt more like a body than as a real person in the interaction”. Originally, Saguy et al. (2010) used 3 items, but in both samples the reliability of the scale was higher once the third item was removed, so we chose to only use the first two for our measure of SSO, leaving us with a reliable scale ( $\alpha = 0.84$  for Sample 1, and  $\alpha = 0.85$  for Sample 2.)

**Relationship Agency.** A scale was used from Garcia et al. (2016) to assess how much agency an individual believes they would possess in future romantic relationships.

Participants were asked how likely it was that they would do the following: “ask someone out on a date,” “open the door for your date,” “pay for a date,” “ask your boyfriend/girlfriend to marry you,” “initiate sex with your girlfriend/boyfriend,” “initiate condom use during sex,” “surprise your boyfriend/ girlfriend with a gift,” and “ask your girlfriend/boyfriend to move with you to a new place.” Responses were measured on a scale ranging from 1 (not at all likely) to 7 (extremely likely). The scale originally had 9 items, but the 9th item had low correlations with the remaining items, ranging from .02 to .30 for the first sample, and .04 to .30 for the second sample. The item was intended to be reverse coded, but correlations were still low enough to make the scale unreliable. Therefore, the ninth item was removed. As a result, the scale had moderately high reliability for both samples ( $\alpha = 0.72$  for Sample 1,  $\alpha = 0.74$  for Sample 2).

**Career Aspirations.** To conceptualize participants’ career aspirations after the interaction, we used the 10-item adaptation of P. Gray and M. OBrien (2007)’s Career Aspiration Scale employed in Garcia et al. (2016), which asked participants to consider how true 10 statements were in regard to their future careers on a scale from 0 (not at all true of me) to 4 (very true of me). Items include “I hope to become a leader in my career field” and “I hope to move up through any organization or business I work in.” Items were fairly reliable ( $\alpha = 0.73$  for Sample 1,  $\alpha = 0.80$  for Sample 2).

**Trait Self-Objectification.** Trait self-objectification (TSO) was assessed using the Self-Objectification Questionnaire (Barbara L Fredrickson et al., 1998; M. Noll & L. Fredrickson, 1998), which evaluates the extent to which individuals view their bodies in observable versus nonobservable ways. The questionnaire asked participants to rank order both appearance and functional aspects of their bodies, from 1 (least important) to 10 (most important), with respect to physical self-concepts. Of the ten body attributes, five of the items were appearance-based (weight, sex appeal, physical attractiveness, firm/sculpted muscles and body measurements), and five of the items were competence-based (strength,



physical coordination, energy level, health and physical fitness). Difference scores were computed by subtracting the sum of the 5 functional aspects/competence attributes (e.g., health, strength) from the sum of the 5 physical self-concepts/appearance attributes (e.g., physical attractiveness, weight), and all measures were multiplied by -1, as was done in Garcia et al. (2016), so that positive scores indicated greater TSO.

**Description of the Samples.** Thirty-two previously unacquainted self-identifying female-sex dyads (64 total participants) from two liberal arts institutions in the Northeast of the United States participated in this study. More specifically, twelve of the pairs, which derived from Sample 1, were students at a co-ed liberal arts college, while the remaining twenty pairs who came from Sample 2 attended a women’s liberal arts college. Initially, data was collected from same-sex and mixed-sex dyads that comprised of male and female gendered individuals. Sample 1 originally consisted of twenty-two pairs, twelve men and thirty-two women. Twenty-three pairs made up of forty-three women and one man, as well as two participants who did not identify with either gender category, formed Sample 2. Due to similarities across samples in regard to correlation patterns between significant variables within this study, the two datasets were combined. For consistency, we limited participant data to same sex female pairs at the two colleges. These participants were mostly first-year college students, with an average age of 18.85 ( $SD = 1.04$ ). The sample was 48.44% White/European American, 9.38% Black/African-American, 28.12% Asian/Pacific Islander, 9.38% Latinx, and 4.69% mixed-race. There were 8 White/White pairs and 4 same race racial minority pairs, for a total of 12 same-race pairs. The remaining 20 were mixed race pairs, of which 15 were White/racial minority pairings and 5 were cross-racial minority group pairs. 64.06% of the sample identified as heterosexual, and 25% identified as gay, lesbian or bisexual.

## Data analysis

We used R (Version 3.5.2; R Core Team, 2018) and the R-packages *apaTables* (Version 2.0.5; Stanley, 2018), *devtools* (Version 1.13.5; Wickham, Hester, & Chang, 2018), *dplyr* (Version 0.8.3; Wickham, François, Henry, & Müller, 2019), *forcats* (Version 0.3.0; Wickham, 2018), *ggformula* (Version 0.7.0; D. Kaplan & Pruim, 2018), *ggplot2* (Version 3.2.1; Wickham, 2016), *haven* (Version 2.1.0; Wickham & Miller, 2019), *irr* (Version 0.84.1; Gamer, Lemon, & <puspendra.pusp22@gmail.com>, 2019), *knitr* (Version 1.25; Xie, 2015), *kutils* (Version 1.70; Johnson, Kite, & Redmon, 2020), *lattice* (Version 0.20.38; Sarkar, 2008), *lavaan* (Version 0.6.1; Rosseel, 2012), *lpSolve* (Version 5.6.15; Berkelaar & others, 2020), *Matrix* (Version 1.2.15; Bates & Maechler, 2018), *mosaic* (Version 1.2.0; Pruim, Kaplan, & Horton, 2017, 2018), *mosaicData* (Version 0.17.0; Pruim et al., 2018), *nlme* (Version 3.1.137; Pinheiro, Bates, DebRoy, Sarkar, & R Core Team, 2018), *papaja* (Version 0.1.0.9842; Aust & Barth, 2018), *psych* (Version 1.8.4; Revelle, 2018), *purrr* (Version 0.3.2; Henry & Wickham, 2019), *readr* (Version 1.1.1; Wickham, Hester, & François, 2017), *stringr* (Version 1.4.0; Wickham, 2019), *tibble* (Version 2.1.3; Müller & Wickham, 2019), *tidyr* (Version 1.0.0; Wickham & Henry, 2019), *tidyverse* (Version 1.2.1; Wickham, 2017), and *xtable* (Version 1.8.3; Dahl, Scott, Roosen, Magnusson, & Swinton, 2018) for all our analyses.

## Results

### Analysis Strategy

This study sought to replicate the results of Garcia et al. (2016)'s study, done with male-female pairs, which used dyadic analysis to detect whether partners' objectification of one another affected state self-objectification (SSO). We hope to investigate how the main effects found in the previous study relay to interactions between women: specifically, the relationship between state-other objectification and self-state objectification and the

resulting effect of self-state objectification on inauthenticity during the interaction.

We used path analysis to obtain our estimates, but because our sample is nonindependent, we used the indistinguishable actor–partner interdependence model (Olsen & Kenny, 2006). The APIM can be defined as a “model of dyadic relationships that integrates a conceptual view of interdependence with the appropriate statistical techniques for measuring and testing it” (Olsen & Kenny, 2006). See Figure 1 for a basic APIM model. Unlike the original Garcia et al. (2016) study, our study deals with indistinguishable dyads, meaning the designation of who is designated as “actor” and who is designated as “partner” is arbitrary. Due to constraints of the basic APIM, in that this was an exploration of indistinguishable female dyads, we had to fix all path estimates to be the same across/between people and partners, in addition to all variances, covariances, endogenous intercepts, and exogenous means. Due to the complexity of the original Garcia et al. (2016) study, we also had to set the exogenous covariances equal. More specifically, the covariances between TSO, actor and partner objectification, and the interaction between actor TSO and partner objectification (and vice versa).

In order to interpret model fit, which refers to the ability of a model to reproduce the data (i.e., usually the variance-covariance matrix) we utilized both the I-SAT (saturated) model, and the Null model to ensure that all possible corresponding covariances are fixed to be equal across partners. We obtained fit estimates by subtracting the chi-square estimate for the I-SAT model from the analysis model (Olsen & Kenny, 2006, Peugh, DiLillo, and Panuzio (2013)).

## Main Results

All model estimates and p-values are found in Table 3. The most important findings from Garcia et al. (2016) were the significant partner effect between actor SSO and partner

objectification (specifically men's objectification of women and women's SSO), and the link between actor SSO and actor authenticity (also specifically for women). We did not find a significant effect between actor SSO and actor authenticity ( $\beta = -.10, p = .38$ ), which means we do not have evidence to support the idea that partner objectification is the cause for the negative effects related to relationship inauthenticity. However, we did find a significant relationship between partner objectification and actor SSO ( $\beta = .25, p = .03$ ), which supports our hypothesis that objectification from other women also causes women to self-objectify just as it does in interactions between male-female pairs. We also found a significantly negative effect of authenticity on career aspirations ( $\beta = .18, p = .01$ ) and relationship agency ( $\beta = .27, p = .01$ ). We found that the model had good fit ( $\chi^2 = 22.33, df = 34$ ). In this case, a good fit indicates that there are no direct effects of SSO or SOO on the outcomes on cognitive performance, relationship agency, and career aspirations, which indicates that the path we chose makes sense.

## Discussion

As stated previously, we did not find a significant effect between actor SSO and actor authenticity ( $\beta = -.10, p = .38$ ), which suggests that there is not sufficient evidence to support the claim that partner objectification is the cause for the diverse range of negative effects related to relationship inauthenticity. However, we did observe a significant partner effect of objectification on actor self-objectification, which does align with our hypothesis that theorized objectification from other women can also cause women to self-objectify just as they do within interactions between male-female pairs. The results of this study demonstrate the complex and ambivalent nature of female sexual objectification and additionally highlight the psychological and social consequences of such objectification processes on women's social relationships and well-being. The sample of the current study was comprised of Western women, being that sexual objectification is most prevalent in this culture

(Loughnan et al., 2015), and research on objectification conducted outside of Western or Westernized countries is scarce (Moradi & Huang, 2008). Because “bodies exist within social and cultural contexts, and hence are also constructed through sociocultural practices and discourses” (Barbara L Fredrickson & Roberts, 1997, p. 174), it is important to consider how diverse social identities within unique cultural contexts may inform sexual objectification phenomenon to test the cross-cultural applicability of theoretical frameworks (Loughnan et al., 2015). Further, sexualizing experiences and self-objectification are thought to begin a very young age, and thus, researchers have only recently begun to examine such experiences among children (Bury, Tiggemann, & Slater, 2016; e.g., Holland & Haslam, 2016; Jongenelis, Byrne, & Pettigrew, 2014). Considering the fact that the average mean age of the investigated participants of this current study was 18.85 years, research among younger and older individuals is needed, especially because self-objectification may change over time (Barbara L Fredrickson & Roberts, 1997). It may be valuable to question the extent to which children, adolescents, or emerging adults of different races or ethnicities are exposed to varied amounts of sexualizing content. Also, future experiments or longitudinal studies should explore the external validity of the notions of self-objectification and how the operationalization of self-objectification may be improved. Regardless, the results from the current analysis highlight how subtle forms of sexist discrimination operate to inform prevention and intervention efforts in both clinical and educational contexts. These results are quite useful for promoting mental health and within early action programs for girls and young women, where scholars and practitioners might provide the tools necessary to circumvent or mitigate negative effects on self-objectification, and combat such experiences.

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Table 1

*Correlations among study variables.*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
Actor's trait self objectification (TSO)	-0.35	2.64					
Actor's authenticity of interaction	5.23	1.02	-.02				
Actor's objectification of partner	-1.58	1.21	.20	-.07			
Actor's state self-objectification	1.92	1.13	.13	-.10	-.09		
Actor's future relationship agency	4.69	0.96	.04	.23+	.09	-.09	
Actor's cognitive performance	5.03	2.29	.08	.11	.11	.02	.07

Table 2

*Descriptive Statistics for Study Variables*

	M	SD
Actor's trait self objectification (TSO)	-0.35	2.64
Actor's authenticity of interaction	5.23	1.02
Actor's objectification of partner	-1.58	1.21
Actor's state self-objectification	1.92	1.13
Actor's future relationship agency	4.69	0.96
Actor's cognitive performance	5.03	2.29

Table 3

*Estimates from final Path Analysis Model*

Path			Estimate	SE	z-value	p-value
Actor SSO	~	Actor TSO	0.08	0.09	0.91	0.36
Actor SSO	~	Actor Obj. of Partner	-0.17	0.12	-1.41	0.16
Actor SSO	~	Partner Obj. of Actor	0.25	0.12	2.15	0.03
Actor SSO	~	Actor TSO x Partner Obj.	0.00	0.04	-0.10	0.92
Actor Authenticity	~	Actor SSO	-0.10	0.12	-0.88	0.38
Actor Cog. Performance	~	Actor Authenticity	0.33	0.27	1.22	0.22
Actor Career Aspirations	~	Actor Authenticity	0.18	0.07	2.66	0.01
Actor Rel. Agency	~	Actor Authenticity	0.27	0.10	2.64	0.01

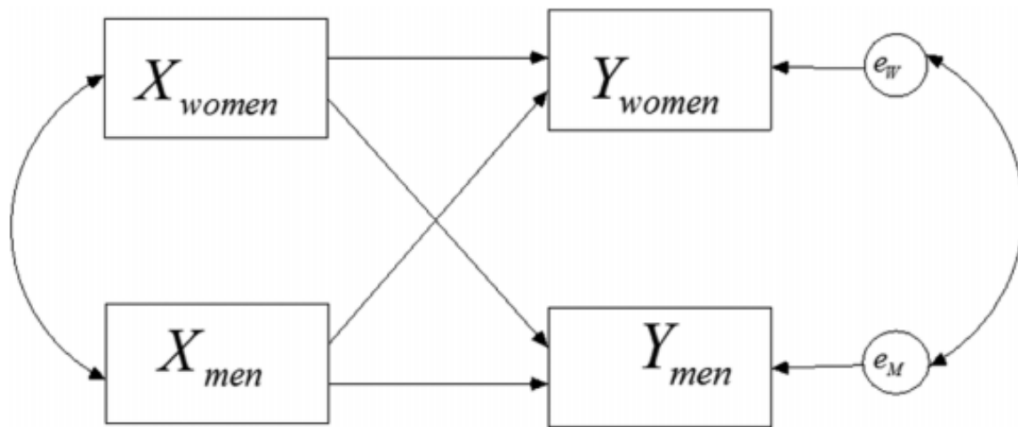


Figure 1. Basic actor-partner interdependence model (APIM) depiction.

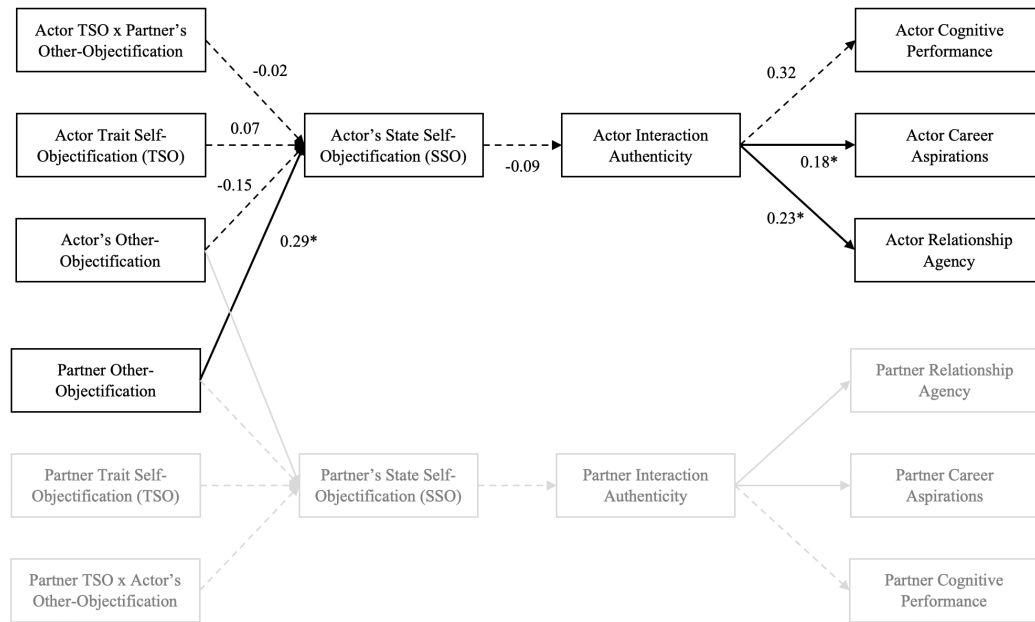


Figure 2. Path Analysis Model with Estimates