

## **Dominance as Defined Through Asymmetry in Predictability: An Exploration of the Relational Stage Model**

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**ABSTRACT:** Relational dominance has been defined in various ways. However, most definitions deal with vague perceptions of influence in terms of passively accepting another's statements. We argue that a compelling and specific measure of dominance lies in the asymmetry of predictability. The asymmetry of predictability asserts that when person Z's future behavior is more predictable from person Y's past behavior, but not the inverse, then person Y is regarded as more dominant. This is a precise, operable definition of influence that is based on behavioral observation and coding. We created a scale designed to measure facets of asymmetry of predictability and contrast it with crude measures that are discussed in the literature as relationships develop. A series of research questions and a hypothesis provide preliminary evidence for the feasibility of measuring dominance as asymmetry of predictability across stages of relationships. Results reveal that more dominance asymmetry is exhibited as relationships are in decay stages.

**Keywords:** Asymmetry of predictability, dominance, relational stages

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Think of the most dominant person in your social network including yourself. What makes you or others dominant? Is it because they are loud, competitive, noncompromising, constantly talk, interrupt, or persuasive. There is a litany of characteristics of dominance. Yet, it is also possible, that the least talkative person can be dominant to the extent that other's follow their suggestions. Hence, some dominant persons can be quiet or reticent.

Dominance- and submission underlies all interpersonal relationships (Burgoon & Dunbar, 2000). Common measures of dominance can be signaled through nonverbal cues including facial expressions, gestures, posture, movement, access to greater personal space, nonreciprocal touch and gaze. Paralanguage cues include pitch, volume, the use of pauses and interruptions (Dunbar, 2016). People

often equate dominance with aggression and while that may manifest in certain contexts, dominance can also be seen as an individual's resources, size, and influence as evidenced in what women find attractive in a mate and the methods employed to retain sexual partners (Meston & Buss, 2009). When seeking out and retaining romantic partners, dominance appears to be a strong variable. Hence, the way it is manifested is intriguing across relational stages.

An intriguing way to define dominance that many people do not think about is in the notion of asymmetry in predictability (Gottman, 1979; 2011; Gottman & Ringland, 1981). This means that dominant individuals are less predictable than their subordinate counterpart(s). Dominance in this context can be investigated through overall patterns in variables, rather than individual

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variables. Studies have focused on the dominant individual in the relationship (Gottman & Ringland, 1981); however, what if dominance shifted and evolved with the relationship?

Movement or transition through different stages of romantic relationships are chaotic and rarely happen in a linear fashion. Therefore, if relationships do not behave in an orderly fashion, then dominance as defined through asymmetry in prediction within social contexts should also be descriptive. The current manuscript seeks to investigate dominance and how it operates within the different stages of relationships as set forth by Knapp, Vangelisti and Caughlin's (2014) relational stage model.

### Dominance

Dominance is defined in multiple ways. Crude measures of dominance are who talks first or last, interruptions, staring, and simple amount of talk. Alternatively, Gottman (1979) defined dominance through the asymmetry of predictability. In his definition many of the past conceptualizations are explained. The asymmetry of predictability asserts that when person Z's future behavior is more predictable from person Y's past behavior, but not the inverse, then person Y is regarded as more dominant (Gottman & Ringland, 1981). Operationalizing the definition to incorporate communication behaviors as predictors of dominance aids in understanding relational structures. Burgoon and Hale (1984) argued that "central to the determination of symmetry or complementarity is the degree to which partners emphasized equality between themselves - a symmetrical pattern - or maximized differences - a complementary pattern, a common illustration of the latter being dominance followed by submission" (p.194).

Honeycutt and his colleagues (1997) explored dominance in familial roles through a time-series analysis of turn-at-talk in the context of the popular television program, *The Cosby Show*, which aired from 1984 until 1992. In their study, the authors hypothesized that the amount of talk would be positively correlated to influence - the individual who spoke most often maintained the most influence over other members. The results, however, indicated that

influence was not necessarily predicted through the amount of talk an individual displays. Furthermore, they found that different individuals displayed behavioral dominance at different times during the program. For example, Cliff Huxtable who was the lead character played by Bill Cosby talked the most during the episodes even though his wife, Claire talked the least, but had the most influence as revealed by time-series analyses designed to model asymmetry of predictability. The children exhibited more unilateral and mutual influence of each other compared to the parents influencing each other across the sample of 5 episodes. There are three types of dyadic influence: 1) no influence, neither partner's behavior predicts the other's response. This is type of volatile, arguing couples (Gottman, 2012). 2) Mutual or bilateral influence where each partner's behavior predicts each other's subsequent responses. This happens in egalitarian relationships. Unilateral or one-way influence in which one person's reaction is accurately predicted but not the inverse. This is typical of the demand-withdraw pattern (Schrodt, Witt, & Shimkowski, 2014).

As noted by Honeycutt et al., (1997), a typical time-series model would be of the following form:  $Y_t = b_1Y_{(t-1)} + b_2X_{(t-1)} + E$  where  $Y_t$  represents person A's or B's turn-at-talk behavior (e.g., talk, gaze) during the present time period.  $Y_{t-1}$  and  $X_{t-1}$  is A's or B's preceding turn behavior.  $E$  is the error term. This equation consists of a dependent variable, a lagged dependent variable and a lagged independent variable. This model represents past probabilities. The lagged dependent variable ( $Y_{t-1}$ ) represents the consistency effect while the lagged independent variable reflects the other-influence effect. The influence effect is when B's past probability impacts on A's current behavior (Cappella, 1981).

Hence, when a person speaks and no one responds, consistency is represented when the person starts speaking again such as to repeat his or her statement. A strong consistency effect shows that the partner or other persons are not responding and hence, by definition, there is less dominance. The influence effect shows predictability. One-way influence is the asymmetry of predictability in

that one's behavior is predicted, while the other's partner is not.

### Relationship Development Model

Relationship development requires strategies for initiating, escalating, maintaining, de-escalating, and eventually dissolving the relationship (Dindia, 1994). Knapp and his associates (2014) detailed the staircase model to account for the escalation, stabilization, and descent of relationships over time through communicative actions. The model explored five stages of escalation: initiating, experimenting, intensifying, integrating, and bonding. The model was further developed to account for this phase. Initiating a relationship is defined as the first interaction two individuals have (Fox, Warber, Makstaller, 2013). The initiation stage contains the exchange of superficial information by individuals entwined in the process. Experimenting involves discussion leading to the discovery of similarities and initial reduction of uncertainty. When partners form an emotional connection, individuals have entered the intensifying stage moving them into the integrating stage where a shared relational identity is constructed. Finally, romantic partners enter into the bonding phase where commitment is formalized through such actions as marriage, or in the context of online relationships, they become "Facebook official." Initiating relationships similarly follows the initiation of sexual encounters, which compose a sequence of steps enacted between two parties for expressing, accepting, and refusing interest (Metts & Spitzberg, 1996).

Furthermore, the model also explicated five stages of de-escalation: differentiating, circumscribing, stagnating, avoiding, and terminating. Knapp and his associates (2014) described these "coming apart" stages in greater detail. First, they explained that differentiating is the exact opposite of the integrating phase where couples constructed and shared an identity. In this phase individuals differentiated themselves from the relational identity and that of their partner and become a focal point in the relationship. Next, circumscribing is the decrease in quality and quantity of communication within the relationship. This is a sign of a deteriorating relationship. Stagnating, or the motionless attribute of the

relationship, is marked by non-communication. Individuals claim to have nothing more to say and cease most communication in the process of dissolution. Another stage of dissolution is avoiding. Similar to stagnating, communication individuals avoid communication or employ communication that is specifically formulated to avoid an interaction. Finally, just as the relationship begins, it must also end. The last phase explicated by Knapp, et al. (2014), termination, contains communication characterized by distance (psychological and physical barriers) and disassociation (communication preparing each person for life without the other).

It remains important for researchers to investigate how escalation and dissolution affects individuals' relational narratives and the implications for relational experiences. What if dominance structures underlies that underlie specific relational stages are identified and better understood? Rather than viewing dominance as a concrete trait stable in individuals over time, dominance should be understood as a phenomenon communicated represented through the asymmetry of predictability. Therefore this study examines the following research questions and hypothesis:

**RQ1:** What are the underlying components of dominance scales based on an assortment of crude variables (talk initiation, speaking last interruptions, and passive acceptance of statements) and dominance measures in terms of the asymmetry of predictability?

**RQ2:** Are various measures of dominance reflected through the growth stages of relationships?

**H1:** Asymmetry of predictability as a measure of dominance will be most associated with decaying stage of relationships compared to other measures.

### Method

#### Participants

Participants' (N = 363) age ranged from 18 to 85 (M = 34.92, SD = 11.34). The sample

consisted of 235 females and 128 males. Participants' ethnicities included: 76.6% Caucasian, 8.5% Black or African American, 6.9% Asian, 4.7% Hispanic, 1.9% Other, 0.8% American Indian or Alaska Native, and 0.3% Native Hawaiian or Pacific Islander. Education varied: 36.1% Baccalaureate, 24% Some college, 16.3% Associates degree, 11.8% Graduate degree, 6.9% High school diploma or GED equivalent, 2.5% Professional degree, 1.7% Doctoral degree, and 0.3% Never finished high school. The percentages of current relationship status were: 43.5% Married, 17.9% Single, 12.4% Domestic partnership, 11.8% Engaged, 7.2% Other, 3.6% Friends with benefits, 2.5% Divorced/separated, .06% Widowed.

### Procedures

Participants were recruited from Amazon's Mechanical Turk (MTurk). Amazon's online crowdsourcing platform allows workers to complete tasks for nominal fees. MTurk provides similar samples to other recruitment methods offering affordability by offering access to a large, diverse pool (Mason & Suri, 2012). Other inclusion criteria included: 18 years or older, currently or in the last six months been in a relationship, literate in English, United States residency, and have an MTurk account. They were paid 25 cents for filling it out. A classic paper by Buhrmester, Kwang, and Gosling (2011) indicates how MTurk participants are more demographically diverse than standard Internet samples and more diverse than typical American college samples. Our survey took 5-8 minutes to complete in which they initially completed a consent form followed by the survey.

### Measurements

The survey consisted of multiple measurement sections that included demographics (e.g., age, education, ethnicity, sexual orientation, relationship status). Then participants were asked to indicate how long they identified with their current (reported) relationship status. Following this question, participants were asked to think about the last argument or disagreement they had with their partner and report a general description and how long ago it occurred. This question primed their memory for the remaining questions.

### Relational stage

Participants were asked to answer 50 questions along a 7-point Likert scale (1 = Strongly agree; 7 = Strongly disagree) adopted from Welch and Rubin (2012), measuring: initiation (e.g., I am concerned with how attractive he/she finds me.), experimenting (e.g., We share secrets.), intensifying (e.g., I tell him/her things I would only tell a close friend), integration (e.g., We understand how each other feels without asking), bonding (e.g., I feel totally committed to him/her), differentiating (e.g., We discuss how different we are), circumscribing (e.g., We don't talk to each other), stagnating (e.g., Communication between us is awkward), avoiding (e.g., I find myself physically avoiding him/her), and terminating (e.g., I communicate with this person in an aloof, distant manner). Since this scale has been used before, we tested its factor structure through a confirmatory factor analysis.

### Measures of Relational Dominance

#### Asymmetry in Predictability

Participants answered 12 questions about their most recent argument or disagreement on a 7-point Likert scale (1 = Strongly agree; 7 = Strongly disagree). The items were inductively derived based on descriptions from Gottman and his colleagues (1979; 2012; Gottman & Ringland, 1981). Sample items were: My behavior was less predictable during the argument than my partners. My partner's behavior was less predictable during the argument than mine. I looked more at my partner during the argument rather than the reverse. My partner looked more at me during the argument rather than the reverse.

#### Relational Topoi Scale of Dominance

Burgoon and Hale (1984) initially set forth and conceptualized 12 distinct themes primary to the exchange of relational messages. Upon further exploration of the themes, Burgoon and Hale (1987) explicated the validation and measurement of their initial relational message themes. Two such themes relevant to this study are dominance and equality. Dillard, Solomon, and Palmer (1999) argued that dominance and affiliation act toward differential salience - when one is salient, the other is not during the

experience. People are instructed to think about the last argument they had with a

**Table 1**

Rotated Matrix of Crude Dominance Items

	Component			
	1	2	3	4
1. I spoke first during the argument.	.840	-.037	-.185	-.065
2. My partner spoke first during the argument.	.849	-.013	.015	.085
3. I spoke last during the argument.	-.071	.867	.154	.150
4. My partner spoke last during the argument.	-.131	.863	-.126	-.151
5. I passively accepted my partner's suggestions.	.138	-.116	.834	.046
6. My partner passively accepted my suggestions.	-.222	.176	.772	.018
7. I spoke the most during the argument.	.592	-.352	-.019	-.378
8. My partner spoke the most during the argument.	.604	-.318	.381	.135
9. I interrupted my partner more during the argument.	-.216	.118	.052	.818
10. My partner interrupted me during the argument.	.402	-.213	.032	.692

relational partner. Sample dominance items are: He/she attempted to persuade me and He/she tried to control the conversation.

Partner equality assumes symmetrical dominance; however when subsumed into the measurement of dominance-submissiveness, equality becomes a dimension along which dominance is measured. Sample equality items are: He/she considered us equals. He/she wanted to cooperate with me. Dillard and his associates (1999) were unable to confirm the factor structure of dominance and equality. A better model was evidence when combining the scales. We tested these measures using a CFA.

### Crude Dominance

An additional measure of dominance that we created was a combination of crude measures (e.g, talk duration). Participants answered 10 questions about their most recent argument or disagreement on a 7-point Likert scale (1 =

Strongly agree; 7 = Strongly disagree). These items were derived from examples of various types of dominance discussed in the dominance literature as earlier noted (also see Hamby, 1996). Sample items were: I spoke first during the argument. My partner spoke first during the argument. I spoke last during the argument. My partner spoke last during the argument.

## Results

### Principal Components Analysis

We conducted a principal components analysis with orthogonal rotation to answer the first research question about the underlying dimensions of the crude measures of dominance and the new scale based on asymmetry of predictability. Secondly, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .83, above the commonly recommended value of .60. The

statistic is a measure of the proportion of variance among variables that might be common variance. KMO returns values between 0 and 1 (Cerny & Kaiser, 1977). KMO values between .8 and 1 indicate the sampling is adequate. Initial eigenvalues

**Table 2**

Rotated Matrix of Asymmetry of Predictability Items

Items	Component		
	1	2	3
1. My partner's statements during the argument reduces the range of alternative responses for myself.	.713	.162	.046
2. My partner had greater freedom of action.	.700	-.011	.033
3. The rewards I received during the argument were controlled by my partner's responses.	.681	.323	.122
4. My partner looked more at me during the argument rather than the reverse.	.658	.224	.019
5. My partner's behavior was less predictable during the argument than mine.	.601	.266	.268
6. I had greater freedom of action	.079	.736	-.195
7. My behavior was less predictable during the argument than my partners.	.134	.694	.255
8. I looked more at my partner during the argument rather than the reverse.	.190	.612	.127
9. My statements during the argument reduced the range of alternative responses for my partner.	.247	.590	.151
10. The reward my partner received during the argument were controlled by my responses.	.516	.558	.090
11. I was tense during the argument	.107	.058	.871
12. My partner was tense during the argument.	.097	.141	.857

indicated that the first two factors explained 83% and 78% of the variance respectively. Table 1 presents the factor loadings.

As shown in Table 1, we observed that four of the 10 items loaded on the first component above (talk initiation and duration) suggesting reasonable factorability with primary loadings above .59. We also observed two of the 10 items loaded on the second factor (speaking last). The third and fourth components had two loadings passive acceptance and interruptions, respectively. Cronbach's alpha as well as the Spearman-Brown statistic for the two-item was used to measure internal consistency on each of the scales (Eisinga, Grotenhuis, & Pelzer, 2013). The alphas were moderate: .75 for talk initiation and duration and .75 for speaking last.

The second part of the first research question asked about the factor structure of the new scale of asymmetry of predictability. Table 2 reports the factor structure.

Three components emerged. The first reflects submissive symmetry in which the self is submissive to the partner since the partner controls the range of alternatives through asymmetry of predictability. The other partner is doing the controlling. Hence, one's behavior is predicted by the other's behavior. Conversely, the other partner's behavior is less predictable during the argument compared to oneself. The second component is dominance asymmetry in which one's own behavior is less predictable and the self controls the argument. The third component reflected being tense during the argument by partner and self. The KMO measure of sampling adequacy was robust (.79). The Cronbach alphas for submissive symmetry ( $\alpha = .80$ ) and dominance asymmetry ( $\alpha = .72$ ) were stable.

### **Confirmatory Factor Analysis of the Relational Stages**

Since the relational stage factor structure is relatively new, we hypothesized that the factor structure would be confirmed. Table 3 reports the confirmatory factor analysis for each stage along with the goodness of fit indices and the alpha. All of the factors were confirmed

providing additional evidence of their reliability.

### **Measures of Dominance Reflected through Growth Stages and Asymmetry of Predictability in Decay Stages**

In order, to test the second research question about the correspondence of dominance between measures and growth stages and the second hypothesis that asymmetry of predictability measures would characterize decay stages, we ran a canonical correlation analysis that is used to identify and measure the associations among two sets of variables. Canonical correlation analysis determines a set of canonical roots and presents orthogonal linear combinations of the variables within each set that best explain the variability both within and between sets (Garson, 2015). It allows us to assess the relationship between two sets of variables.

### **Test of Dominance Measures Reflected Through Growth and Decay Stages**

A highly significant canonical correlation root was obtained from the dimension reduction analysis, Wilks  $\lambda = .531$ ,  $F(40, 1021) = 4.64$ ,  $p < .001$  that accounted for 39% of the variance within each set and 15% of the variance between sets. Subsequent dimensional roots were not significant. Table 4 presents the canonical loadings, which represent the correlations between the observed variables and the canonical variates (factors) in each set.

The canonical correlation analysis in Table 4 reveals that the two sets in the first dimension were highly correlated (canonical  $r = .62$ ). The canonical dimension reveals that the dominance set is best reflected by not showing symmetry and dominance asymmetry as noted by the negative signs while talk initiation, duration, and speaking last were not associated. Correspondingly, not showing submissive symmetry and lack of dominance asymmetry is associated with initiating relationships as revealed by negative sign. Interestingly, the direction of the remaining signs in the growth stages reveals a slight correspondence between lack of submissive symmetry dominance asymmetry and experimenting, intensifying, integrating, and bonding. Hence, the hypothesis that asymmetry of predictability as

**Table 3**

Model Fit Indices for Relational Stages Scale and Relational Topoi Dominance Measures

Function	$\chi^2$	df	RMSR	CFI	RMSEA	Low	High
<b>Growth Stages</b>							
Initiation	12.17*	2	.15	.97	.12	.06	.19
Experimenting	28.85*	5	.08	.97	.12	.08	.16
Intensifying	5.15**	5	.03	.99	.01	.00	.08
Integrating	26.28*	5	.07	.98	.11	.07	.16
Bonding	77.47*	5	.10	.94	.21	.17	.25
<b>Decay Stages</b>							
Differentiating	12.39*	2	.11	.97	.12	.06	.20
Circumscribing	29.61*	5	.08	.97	.12	.08	.17
Stagnating	17.38*	5	.06	.99	.09	.04	.13
Avoiding	16.67*	5	.05	.99	.08	.04	.13
Terminating	20.35*	5	.09	.98	.10	.06	.14
<b>Relational Topoi</b>							
Dominance	128.31*	9	.38	.29	.20	.17	.23

Notes: \* indicates model Chi-square statistics were significant at  $p < .01$ .Notes: \*\* indicates model Chi-square statistics were not significant at  $p < .01$ .*Note.* Values are based on the study level ( $N=363$ ).

a measure of dominance would be most associated with decaying stage of relationships compared to other measures received support. Asymmetry was not associated with initiation stages. The hypothesis received strong and consistent support across the stages as revealed in the dimensional root. Hence, submissive symmetry (both exceeding to another) while arguing as well as controlling the interaction through dominance asymmetry (one-way influence) was associated declining phases of relationships.

### Discussion

Extensive scholarship has explored dominance in relationships (Dillard, et al. 1999). More

prolifically is the literature investigating the stages of relational growth and decay (e.g., Knapp et al., 2014). Without question, these areas of study have been rigorously observed, however, we believe that our findings impart several new facets to the study and understanding of relational communication. Perhaps the most notable contribution of this study is knowledge that various measures of dominance were reflected through the growth and decay stages of relationships.

This study attempted to highlight and more clearly understand the role dominance plays in the stages of relationships. The formation of hierarchical social constructs indicates that humans have evolved through the



**Table 4**

Standardized Canonical Component Loadings for Dominance Measures and Relational Stages

<b>Dominance</b>	<b>Dimension</b>
Talk Initiation Duration	-.083
Speaking Last	-.031
Submissive Symmetry	-.809
Dominance Asymmetry	-.845
<b>Growth Stages</b>	
Initiation	-.775
Experimenting	.259
Intensifying	.280
Integrating	.290
Bonding	.330
<b>Decay Stages</b>	
Differentiating	-.843
Circumscribing	-.728
Stagnating	-.779
Avoiding	-.740
Terminating	-.735

NOTE: Canonical  $r$  for Dimension = .62,  $p < .001$ ,  $r^2 = 39.5\%$

structures of dominance and affiliation. Dominance is an individual's place in the social hierarchy, which is viewed as a dynamic state, rather than a fixed trait according to emerging communication scholarship (Burgoon &

Dunbar, 2000). When selecting a mate females desire the ability of the male to offer protection to her and her offspring, among other qualities (Buss, 2003). Physical displays of dominance are common among men searching for a mate

(Clark, Shaver, and Abrahams, 1999). Males, however, are not the only ones to use dominance strategies; females employ various tactics for retaining their mates once acquired (Buss, 2015).

Mate selection and retention is a salient factor in long- and short-term relationships. Individuals of both sexes worldwide seek out partners who, among other traits, are kind, understanding, dependable, and intelligent (Meston & Buss, 2009). This helps explain the finding that individuals in the initiation stage of relationships do not show signs of submissive symmetry and asymmetrical dominance patterns. Men will potentially balance their projected self-presentation of dominance with kindness and understanding. Subsequently, females utilize similar tactics during this stage of a relationship. Whether or not this balance is a mate acquisition strategy through deception should be further investigated in future studies. Deception is prevalent across species and is used to increase reproductive success (Buss, 2015; Meston & Buss, 2009). However, relationships are not static structures. Rather they are dynamic social structures that evolve and change over time. Just as they grow, so too many decay or dissolve. Throughout mating relationships, conflict is inevitable and individuals' experiences of dominance vary depending on the circumstances and the relationship (Dillard, Solomon, & Palmer, 1999). People dissolve relationships for a variety of reasons in a unilateral direction. Conflicts arise out of our want/need to retain our mates.. Submissive symmetry and dominance asymmetry help explain and understand these operational communicative structures during stages of relational decay when these topics emerge in arguments or when these issues become the focal points of relationships.

Overall, our findings align well with the scholarship applying an evolutionary lens to the investigation of interpersonal relationships. Dominance functions as a strategy and a desirable attribute during relationship initiation. We now have a better understanding of the different measures of dominance reflected in the growth stages of relationships. However, as relationships evolve and mate

retention becomes more important for one partner or the other, arguments will occur. Females risk losing resources and protection for them and their offspring and males risk losing a healthy mate capable of providing high quality genetic material for future offspring. As arguments surface during specific stages of relational decay, this study further illuminated asymmetry of predictability during the dissolution process. Future research and theorizing about the functions of dominance in the development and decline of interpersonal relationships should be further conducted.

### Summary

The asymmetry of predictability proved to be the best indicator of dominance in the canonical correlation analysis. Crude measures of talk initiation and speaking last were not associated with any stage of relational development. Moreover, the exploratory factor analysis did not even reveal strategies of passively accepting another's statements. An important implication is that is possible to measure asymmetry of predictability components using the newly created scale. Moreover, the strong support for the second hypothesis demonstrates, preliminary convergent validity for these measures as evidenced with their correspondence with decay stages of relationships.

The dissolution literature is replete with studies on interpersonal conflict in romantic relationships (e.g., Knee, Lonsbary, Canevello, & Patrick, 2005). Often, relationships in decaying stages have more interpersonal conflict (Gottman, 2012). Future research needs to determine the association between and violence. There is a long, scale of dominance in abusive relationships but it is has vague perceptions of authority (Sometimes I have to remind my partner who's boss), restrictiveness (I have a right to know everything my partner does), and disparagement (My partner is basically a bad person) with little application to nonviolent relationships. None of these factors precisely reflect how dominance is enacted in actual communication. Future validation of our asymmetry scale is planned.

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