THE TRUTH AND BIAS MODEL OF THE ATTRACTION TO ALTERNATIVE OTHERS

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ABSTRACT

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Keywords: projection of the attraction to alternatives, truth and bias model, jealousy, commitment, life history strategies

The projection of attraction to alternatives was proposed by Neil and Lemay (2019), which is that people in a romantic relationship are attracted to alternative others; they tend to believe that their partner is similarly attracted to alternative others. The Truth and Bias Model (West and Kenny 2011) is a conceptual framework that examines the impact of truth and bias on human judgment by measuring directional bias, tracking accuracy, and projection. The main aim of this research is to examine whether people can accurately detect their partner's attraction to alternative partners by using the Truth and Bias model. As a moderator, the effects of jealousy, gender, commitment, and life history strategies were also examined. A cross-sectional study was conducted with 117 couples between the ages of 18 and 30, and mixed model analysis was applied. On average, participants were likely to underperceive their partner's attraction to alternatives, track their partner's attraction to alternatives accurately, and project their attraction to alternatives to their partner. Jealousy was associated with higher tracking accuracy and lower projection. Females stated lower projection than males. Commitment was associated with a lower projection. A faster strategy was associated with an overperception of the partner's attraction to alternatives and higher projection. The females had a lower projection than the males. The results of this research show that individuals make projections of attraction to alternatives, as suggested by Neal and Lemay (2019). In addition, it is emphasized that there are cognitive biases that influence attraction to alternatives and infidelity, which future studies should take into consideration.

ÖZET

ALTERNATİFLERE DUYULAN ÇEKİMİN GERÇEK VE YANLILIK MODELİYLE İNCELENMESİ

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PSİKOLOJİ YÜKSEK LİSANS TEZİ, HAZİRAN, 2024

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Neil ve Lemay (2019) tarafından ortaya atılan alternatiflere olan çekiciliğin yansıtılması, romantik bir ilişki içinde olan insanların alternatif partnerlere çekim duydukları kadar partnerlerinin de alternatiflerden çekim duyduğunu varsaymalarına dair bir yanlılıktır. Gerçek ve Yanlılık Modeli (West ve Kenny 2011) gerçek ve yanlılığın karar verme üzerindeki etkisini, yönlü yanlılık, takip isabetliliği yansıtma yanlılıklarıyla aynı değişken üzerinden incelemeyi sağlayan teorik bir çerçevedir. Bu araştırmanın amacı, bireylerin partnerlerinin alternatiflerden çekim duyup duymadığını isabetli olarak tahmin edebilmelerini Gerçek ve Yanlılık Modeliyle incelemektir. Moderatör olarak kıskançlık, cinsiyet, bağlılık ve yaşam öyküsü stratejilerin etkileri de incelenmiştir. 18 ile 30 yaşları arası 117 çiftle kesitsel araştırma yapılmıştır ve Mixed model analizi uygulanmıştır. Ortalama olarak, katılımcılar partnerlerinin alternatiflere duyduğu çekimi olduğundan daha az algılamışlar, partnerlerinin alternatiflere olan çekimini isabetli bir şekilde takip etmişler ve kendilerinin alternatiflere duyduğu çekim miktarını partnerlerine yansıtmışlardır. Kıskançlık, daha yüksek takip isabetliliği ve daha düşük yansıtma ile ilişki bulunmuştur. Kadınlar erkeklerden daha düşük bir yansıtma göstermiştir. Bağlılık daha düşük yansıtma ile ilişki bulunmuştur. Hızlı yaşam öyküsü stratejisi partnerin alternatiflere duyduğu çekimi olduğundan daha fazla algılamak ve daha yüksek yansıtmayla ilişkiliydi. Bu araştırmanın sonuçları, Neal ve Lemay'ın önerdiği gibi bireylerin alternatiflere duyduğu çekimi partnerine yansıttığını ortaya koyuyordu (2019). Alternatiflere olan çekimi ve aldatmayı etkileyen bilişsel yanlılıklar olduğunun önemi vurgulanmıştır.

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to my fairy

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1. INTRODUCTION

1.1 Attraction to Alternative Partners

Attractive alternative partners are a substantial relationship threat to the people involved in a relationship. The existence of attractive alternative partners is sometimes related to a temptation to and motivation for pursuing extradyadic behaviors (Baker and Miller 2020). Being tempted by attractive alternatives diminishes commitment (Baker et al. 2020; Rusbult et al. 1983), love (Gonzaga et al. 2008), and satisfaction (Ritchie et al. 2021; Simpson et al. 1990) in the current relationship. Experiencing a desire for attractive alternatives is positively related to stress, internal conflict, and ambivalent feelings towards the current partner (Zoppolat et al. 2022). Attraction to alternative partners may also lead to infidelity (Brady and Baker 2022; Lydon 2010), which is the most robust predictor of relationship dissolution (Amato and Previti 2003; Hall and Fincham 2006). Moreover, having an affair with another person may result in sexually transmitted diseases (Fincham and May 2017) and domestic violence towards the tempted person (Easton and Shackelford 2009).

Typically, people tend to stay committed to their current partner (Finkel et al. 2002). The Investment Model posits that people's motivation to maintain their relationship increases as a function of their relationship satisfaction and investment in the relationship (Rusbult 1980). Relationships have various benefits for people, including increased likelihood of reproduction, receipt of social support, dyadic coping in case of stress, better physical and mental health, and self-expansion (Ogolsky et al. 2017). Intending to protect the relationship and thus these benefits, partners may apply some strategies dealing with the threats and derogating the allure of attractive alternatives (Finkel et al. 2002; Lydon and Karremans 2015).

One's attraction to alternatives impacts emotional and cognitive outcomes for the partner, too. Detecting one's interest in alternatives increases the partner's jealousy

(Buunk and Massar 2023; Neal and Lemay Jr; 2014; Yarab et al. 1999), betrayal, and emotional distress (Fife et al. 2008). One's infidelity could result in the partner's mental health problems, including frequent symptoms of post-traumatic stress disorder, anxiety, and depression (Fincham and May 2017). In addition, partner relationship satisfaction, investment in the relationship, and commitment are diminished (Negash et al. 2014). The partner may even pursue a relationship with an alternative partner to take revenge (Mongeau, Hale, and Alles 1994).

1.1.1 Projection of Attraction to Alternatives

People in romantic relationships often make assumptions and form beliefs about each other's potential extradyadic involvements (Neal and Lemay 2019). However, their own desire for alternative partners complicates their perceptions and guesses about the partner's emotions and behaviors (Simpson et al. 1995). Even though projection in romantic relationships occurs in the partner's behaviors, emotions, and personality features (LaBuda et al. 2023), research about projection and extradyadic behaviors is quite limited. Neal and Lemay (2019) proposed that when people in a romantic relationship are attracted to alternative others, they tend to believe that their partner is similarly attracted to alternative others. In their study, this bias, which they named "projection of attraction to alternatives," was positively associated with anger and negative behaviors toward the current partner, such as selfish, cold, and critical behaviors.

Neal and Lemay (2019) posit two potential explanations for the projection of attraction to alternatives. First, from the cognitive perspective, Neal and Lemay (2019) reasoned that perceiving a partner's attraction could be primed by their own attraction to alternatives. The desire for alternative partners would increase the activation of schemas and their accessibility. While making judgments about the partner's attraction to alternatives, available schemas in mind could influence the decision. People will project their own attraction to alternatives onto their romantic partners, perceiving their partners in a similar direction. Second, such a perception allows people to reduce their guilt and justify their extradyadic interests and actions.

In the study conducted by Neal and Lemay (2019), it is unclear whether people's perceptions about their partner's attraction are accurate and whether their bias (if any) is only due to the projection. Considering this possibility, in this study, it will be investigated the accuracy and bias in the perception of the partner's attraction to alternatives using the Truth and Bias Model (West and Kenny 2011).

1.2 Truth and Bias Model

West and Kenny (2011) developed a conceptual framework that examines the impact of truth and bias on human judgment. Their model, named the Truth and Bias Model, allows for investigating the dyadic associations between self-reported levels and perception of the partner's levels of a variable. According to this model, truth is the partner's own declaration of the measured variable. By centering actor and partner's reports using the truth (i.e., a difference from the truth), it becomes possible to investigate the degree of deviation from the partner's report (Stern and West 2018).

According to the model, bias is deviated judgments from the truth. The model assesses the accuracy and two types of biases using reports about the same variable collected from oneself and the partner. First, directional bias represents the gap between the truth (i.e., the partner's report) and one's perception (West and Kenny 2011). Overperception and underperception are the directional bias types that occur when the perceived level is higher and lower than the truth, respectively (Fletcher 2015). The tracking accuracy level represents the association between the truth (i.e., the partner's report) and how one perceives it (West and Kenny 2011). Projection, or assumed similarity, refers to attributing one's behaviors, desires, and thoughts to the partner (Neal and Lemay 2019).

The applications of the Truth and Bias Model's components to this study are explained in this paragraph. Directional bias is the mean difference between one's perception of the partner's attraction to alternatives and the partner's report of their attraction to alternatives (West and Kenny 2011). Positive and negative differences are called overperception and underperception, respectively. Tracking accuracy refers to the correlation between one's perception of the partner's attraction to alternatives and the partner's report of their attraction to alternatives (West and Kenny 2011). Projection represents the correlation between one's attraction to alternatives and their perception of the partner's attraction to alternatives (West and Kenny 2011).

Relationship science research has previously shown that partners can be both biased and accurate simultaneously (Fletcher and Kerr 2010), meaning that directional bias, tracking accuracy, and projection may co-occur (Stern and West 2018). The Truth and Bias Model also allows the investigation of moderator variables such as jealousy, gender, commitment, and life history strategies that change the strength of accuracy and bias levels, which is one of the aims of this study.

1.3 The Truth and Bias Model of the Attraction to Alternatives

1.3.1 Directional Bias

The evolutionary perspective posits that people need to be on guard to protect their romantic relationships (Buss 2018). The environment harbors threats from different sources, including mate-poachers and alternative mates, for the partner's potential infidelity. Mate poaching is luring or stealing a mate in a relationship (Buss 2020). In the college sample, The evolutionary perspective posits that people need to be on guard to protect their romantic relationships (Buss 2018). The environment harbors threats from different sources, including mate-poachers and alternative mates, for the partner's potential infidelity. Mate poaching is luring or stealing a mate in a relationship (Buss 2020). In a college sample, 50% of participants stated that they attempted to poach someone else, 85% stated that they experienced someone trying to poach them, and 80% said that someone tried to poach their partner (Schmitt and Buss 2001). In an analysis covering 53 nations, nearly half of the participants stated that they attempted mate-poaching, and more than half of the participants received an attempt (Schmitt et al., 2004). A recent study showed that around 70% of the people stated that they are currently attracted to another person besides their partner (Zoppolat et al. 2022). Moreover, contacting alternative others has become more accessible due to the developments in the dating app industry (Brady and Baker 2022).

Detecting clues and making decisions in an environment of the threat of losing one's partner exposes the person to make some errors. The Error Management Theory (Haselton and Buss 2000) explains that people prefer less costly errors under uncertain conditions. Based on the evolutionary perspective, not being cautious against mate-poachers can result in losing a tremendous amount of investment made for the relationship. To avoid this cost, people tend to evaluate events involving the romantic partner as transgressive and poach-oriented, even though that is not the case (Haselton and Buss 2000). Linking that theoretical argument with the current study, it is predicted that people overperceive their partner's attraction to alternatives to stay alert against their partner's possible misbehaviors.

1.3.2 Tracking Accuracy

On average, people can partly track their partner's traits and qualities (Fletcher and Kerr 2010). From accurate information taken from the environment, making decisions about the partner becomes more successful (Haselton and Funder 2006). Accurately tracking may be essential to protect and enhance the relationship, especially when individuals make critical decisions about their partner or the relationship (e.g., whether they want to maintain the relationship; Gagne and Lydon 2004; Thomas and Fletcher 2003).

The inability to track the partner's attraction to alternatives is likely to generate several costs, such as the partner's infidelity (Neal and Lemay 2019). The partner's infidelity means the genetic uncertainty of possible offspring, the error of investment in the relationship, and the loss of the resources transferred to the partner and offspring (Buss and Shackelford 1997). In the end, tracking a partner's attraction to alternatives accurately becomes vital to avoid such costs. Thus, it is predicted that people can track their partner's attraction to alternatives somewhat accurately.

1.3.3 Projection

From the cognitive perspective, Neal and Lemay (2018) reasoned that the perception of the partner's attraction to alternatives could be primed by their own attraction to alternatives.

Overall, considering the components of the Truth and Bias Model, it is predicted to find significant levels of overperception, tracking accuracy, and projection in this research. Along with these average effects, the directional bias, tracking accuracy, and projection levels vary on third variables (i.e., moderators: jealousy, gender, commitment, and life history strategy). These moderators are expected to be correlated with some components of the Truth and Bias Model (i.e., overperception, projection, and tracking accuracy). Research hypotheses regarding the correlated components below are presented, and the correlations with the other components will be explored.

1.3.4 Moderator 1: Jealousy

Jealousy is an emotion triggered by threats of losing valuable relationships (Buss and Hamelton, 2005). Threats that are guided by third parties, such as mate poach-

ers and attractive alternatives, can cause the loss of valuable relationships (Neal and Lemay 2019). Jealousy has evolved as a defense mechanism to protect relationships (Buss 2018). People with high jealousy believe that their relationships are in danger and vulnerable to threats. Thus, high jealousy makes being more sensitive towards their partner's attraction to alternatives and increases their likelihood of engaging in mate-guarding behaviors (Neal and Lemay 2014). Guarding strategies aim to maintain the relationship with the partner and prevent any approach from intrasexual rivals to the partner (Buss, 2002).

Pfeiffer and Wong's multidimensional definition of measuring jealousy states that jealousy consists of three components: emotion, cognition, and behavior (1989). Among these subdimensions, there may be differences in terms of frequency of experience and functionality in the relationship. It has been stated that emotional jealousy is experienced more commonly than other dimensions and has a more positive functionality in the relationship (Elphinston et al. 2011). The other two dimensions are more common in pathological jealousy (Pfeiffer and Wong 1989). Therefore, emotional jealousy subscale will be used in this study.

Jealousy relates to frequent suspicion toward the partner's infidelity and may trigger a perceived threat of the partner's infidelity even in the lack of such threat (Andrews et al. 2008; Goetz and Causey 2009; Simpson et al. 1995). Possible doubts, including the existence of a potential rival or an ongoing relationship with a rival, could increase uncertainty about the current relationship and the partner (Knobloch et al. 2001). Such an uncertain situation could feed errors and inaccuracies in the decision-making process about the evaluation of the partner's behaviors (Poore 2009). Thus, jealousy is hypothesized to be positively correlated with the overperception of the partner's attraction to alternatives.

1.3.5 Moderator 2: Gender

Research with an evolutionary perspective has shown that both males and females are attentive to their partner's possible attraction to the alternatives, albeit for different reasons. Men would be attentive to decrease their paternal uncertainty (Buss and Hamilton 2000). Any cuckolding scenario can cause enormous costs to males due to the risk that investment will be diverted to their offspring (Buss and Shackelford 1997). Males would lose their own investment due to raising a rival's offspring, and his partner would invest in cuckold offspring instead of any offspring might have with his partner. However, maternity is certain for females. Females would aim to reassure their partner's commitment and prevent the risk of losing

the resources they receive from their partner (Buss and Hamilton 2000). In the face of the existence or possibility of an alternative, females experience a drastic cost due to their partners' destructive behavior, including stalking, violence, and murder (Andrews et al. 2008). Based on this evolutionary perspective, focusing and reacting to infidelity cues differ across the sexes. Males tend to be sensitive to sexual infidelity, whereas females tend to be sensitive to romantic infidelity. Perceiving threats and triggering jealousy based on them are adapted strategies for detecting infidelity cues that are obstructive to evolutionary goals (Buss et al. 1999).

These sex differences are confirmed across studies (Buss et al. 1999; Buss and Hamilton 2000). However, the role of culture in shaping perceptions of the partner's attraction to alternatives should also be considered. The perception and expression of infidelity may be affected by the collectivistic and masculine culture in Turkey (Sunar and Fişek 2005). Social norms generally accept males' infidelity, and intention and attitude levels to engaging in infidelity are more favorable for males than females (Toplu-Demirtaş and Fincham 2018). However, when females commit it, the reactions are more likely to appear as blame and stigmatization (Toplu-Demirtaş et al. 2022). Studies conducted in Turkey consistently showed gender-based reactions to infidelity. Males reported more permissive attitudes toward engaging in infidelity (Anlatan 2019; Toplu-Demirtaş et al. 2014), higher levels of the intention of infidelity (Anlatan 2019; Şatıroğlu 2017; Toplu-Demirtaş and Tezer 2013) and higher number of infidelity acts (Müezzinoğlu 2014) than females. However, there are some inconsistent results in the literature regarding gender differences in jealousy and reactions to infidelity in Turkish culture. For example, females reported higher emotional jealousy than males in some studies (Demirtaş 2004; Demirtaş and Dönmez 2006) and lower emotional jealousy in some others (Kemer et al. 2016). Furthermore, some studies did not find gender differences in romantic jealousy (Güldür 2020; Kaplan and Tasa 2022). Similarly, females stated higher distress about their partner's potential romantic infidelity than about their sexual infidelity. In contrast, males stated almost equal distress about the partner's potential romantic and sexual infidelity, while reactions towards romantic infidelity were significantly severe (Yerlikaya 2015).

In two studies by Neal and Lemay (2015; 2019), there was no gender difference in the perceived perception and projection of the partner's attraction to alternative others. In their assessment of attraction to alternatives, they used attraction to alternatives combined with sexual and romantic attraction. To make a more appropriate adaptation of the assessment of the main variable, the same combined version of attraction to alternatives was used in this study. However, regarding mixed theoretical discussions and findings on evolutionary and cultural perspectives

and the combined assessment, there is no strong claim in the gender differences on the directional bias, projection, and tracking accuracy of attraction to alternatives. The associations will be explored.

1.3.6 Moderator 3: Commitment

Commitment could be defined as the desire and motivation to maintain a relationship (Stanley et al. 2010). Commitment heightens the derogation of alternatives. Highly committed people pay less attention to alternatives, become less attracted to them, and avoid interactions with alternative partners (Park and Park 2021). From the evolutionary perspective, commitment is a facilitator of the mutual investment of both males and females in offspring by increasing pair bonding (Campbell et al. 2015). Through parents' commitment, the possibility of the offspring's reaching reproductive age increases (Geary 2000).

Committed people tend to believe that their partner is as committed (Agnew et al. 1998; Wieselquist et al. 1999). Perceiving that the partner is committed leads to the belief that the partner is resistant to the attraction of alternatives (Wieselquist et al. 1999). The belief about the partner's degree of commitment allows interpretation of the partner's investment in the relationship, guiding the actor's investment in the relationship and relationship maintenance acts (Neal and Lemay 2014). In this way, the partner's attraction to alternative others could even become unnoticeable. Thus, it is predicted that high commitment can lead to an underperception of the partner's attraction to alternative others.

Committed individuals have the motivation to maintain their relationship through positive illusions (Barelds and Dijkstra 2011) and, as a vicious cycle, positive illusions elevate commitment (Leo 2014). Mutuality of commitment and positive illusions leads to evaluating romantic relationships through rose-tinted glasses and exaggerating the positive sides of the partner's features, which may, in turn, increase the inaccuracy of relationship judgments (Fletcher et al. 2015). As a prediction, commitment will be negatively associated with tracking accuracy in the partner's attraction to alternative others.

1.3.7 Moderator 4: Life History Strategies

According to the Life History Theory, organisms have limited energy to solve evolutionary problems: reproduction, growth, development, and survival. Due to the

finite budget, organisms should maximize their evolutionary fitness through the tradeoff process (Kaplan and Gangestad 2015). Tradeoffs can occur on dimensions of somatic-reproduction, mating-parenting, and quantity-quality of the offspring (Kaplan and Gangestad 2004). To exemplify the first dimension of somatic-reproduction, in the younger ages, such as childhood, the allocation of resources and energy is used for growth, which reduces the likelihood of fertility. When the organism ages older and matures, such as in adolescence and adulthood, fertility increases, but growth declines. The second dimension posits that investing more resources and energy into caring for existing offspring as parenting indicates fewer resources and energy into creating new offspring as mating. The quantity and quality dimensions state two options, a high amount of offspring but less caring for them, or a low amount of offspring but more caring for them.

Environmental factors such as stressors, harshness, uncertainty, and mortality determine the life history strategy on a slow and fast continuum (Del Guidice et al. 2016). The slow strategy ensues in an environment with predictable, safe, and low mortality rates (Szepsenwol and Simpson 2019). Due to the future being predictable and the possibility of dying before reproduction being low, the environment allows organisms to set long-term goals. Cognitive and material resources for achieving long-term goals are provided (Szepsenwol and Simpson 2019). Based on tradeoffs, features of the extended growth period involving late menarche and delayed puberty, delayed reproduction time, significant parental effort and investment in existing offspring, and high quality and low quantity offspring appear to increase fitness in the living environment (Kaplan and Gangestad 2004). In contrast, the fast strategy emerges in an environment with unpredictable, harsh, and high mortality rates. As a result of the more unpredictable future and the possibility of dying before reproduction, short-term goal orientation develops. The accelerated growth period, including early menarche and puberty, initial reproduction time, low parental effort and investment in existing offspring, and low quality and high quantity offspring emerge through the evolutionary process (Szepsenwol and Simpson 2019).

Life history strategies have different reflections on romantic relationship dynamics because fast and slow strategies differ in perceiving threats and forming relationships in short-long mating. The individual adapts his perspective on life by internalizing the amount of stressors, harshness, uncertainty, and mortality in his environment (Simpson et al. 2017, 11–14). Experiences with a warm and predictable environment signal the trustworthiness of others, predictability, and availability of resources, which is crucial information for the allocation of strategies (Belsky et al. 1991). People with slow strategies have schemas about the world, and the people around them are safe and take an active place in the mind (Szepsenwol and Simpson 2019).

These beliefs would help them maintaining their long-term relationship (Szepsenwol and Simpson 2019). On the other hand, perceiving the world through the consistent filter of uncertainty, harshness, and mortality would lead to fear of abandonment, mistrust of others in romantic relationships (Black and Schutte 2006; Simpson et al. 2017), and the perception of vigilance and dangers of the environment (Szepsenwol and Simpson 2019). People with fast strategies have schematic beliefs related to unpredictability and a tendency to be vigilant towards threats. Unpredictability schemes are easily accessible in their minds, and they can quickly react when they perceive a threat (Szepsenwol and Simpson 2019). These traits are adapted life history strategies based on environmental conditions to increase people's fitness.

Sociosexual orientation is a term for the willingness to engage in uncommitted relationships. It is classified as personal differences, including behaviors, attitudes, and desires related to sexuality, and it can range from restricted to unrestricted (Fletcher et al. 2013). Individuals with restricted orientation expect more commitment, emotional closeness, and love before having sexual intercourse with their partner, and this results in fewer short-term sexual partners (Fletcher et al. 2013). On the other hand, people with unrestricted orientations have lower expectations than those with restricted ones, and due to that, they are more likely to look for attractive partners and extradyadic involvements (Wilson et al. 2011). The slow life history is characterized by restricted sociosexual orientation, while the fast life history is characterized by unrestricted sociosexual orientation, and both aim to maximize fitness depending on the environmental settings (Simpson et al. 2017, 11–14).

In fast life history, showing the features of the unrestricted sociosexual orientation, overcoming the possibility of dying before reproduction, forming more short-term relationships, and having more sexual partners is an adaptive strategy (Szepsenwol and Simpson 2019). Motivated cognition of seeking out alternative partners can frequently activate schemas in the mind. Even though their partner does not attend any extradyadic activity, people with a fast strategy may assume that partners' attraction to others is high due to the accessibility of schemas. As a prediction, a faster strategy would lead to an overperception of the partner's attraction to alternative others.

Being experienced with uncertainty, harshness, and mortality would result in an ability to notice and track clues about the partner's extradyadic intentions. Having a fast strategy and being more vigilant about the environment leads to quicker detection of possible threats (Szepsenwol and Simpson 2019). People with a fast strategy can apply their experiences and skills in the domain of relationship threats

at the same time. As a prediction, a faster strategy is likely positively associated with tracking accuracy.

1.4 The Current Study

The main aim of this research is to examine whether people can accurately detect their partner's attraction to alternative partners. Neal and Lemay (2019) proposed that when people in a romantic relationship are attracted to alternative partners, they tend to believe that their partner is similarly attracted to alternative others (i.e., projection of attraction to alternatives). To extend their findings and test other types of biases, the Truth and Bias Model (West and Kenny 2011) was used. The Truth and Bias Model assesses three types of biases and accuracy: directional bias (underperception or overperception), tracking accuracy, and projection. In addition to these average effects, potential moderations of jealousy, gender, commitment, and life history strategies on the biases will be examined.

The current study's hypotheses are listed below:

  1.1 On average, participants will overperceive their partner's attraction to alternatives.

  1.2 On average, participants will track their partner's attraction to alternatives accurately.

  1.3 On average, participants will project their attraction to alternatives to their partner.

  1.4 High jealousy will be associated with the overperception of the partner's attraction to alternatives.

  1.5 High commitment will be associated with the underperception of the partner's attraction to alternatives

  1.6 High commitment will be associated with tracking the accuracy of the partner's attraction to alternatives.

  1.7 Faster life history strategy will be associated with the overperception of the partner's attraction to alternatives.

  1.8 Faster life history strategy will be associated with tracking the accuracy of the partner's attraction to alternatives.

The role of gender in directional bias, tracking accuracy, and projection of the partner's attraction to alternatives will be explored. In addition, the moderating roles of jealousy, commitment, and life history strategies with other types of biases will be explored.

2.   METHOD

2.1 Procedure and Participants

Power analysis for the Actor-Partner Interdependence Model revealed that at least 79 couples were required to detect medium actor and partner effects ($\beta = .30$) at .80 statistical power, with correlations of $r = .30$ between actor and partner variables and between the partners' errors. APIMPowerR software was used for power analysis calculations (Ackerman and Kenny 2016). In addition, for the models with moderators, another power analysis was conducted by using the Shiny App (Finnas et al. 2021). At least 114 couples were required to reach .80 statistical power and detect a correlation of $r = .30$ between the interactions and dependent variables. In this study, it was aimed to collect data from at least 114 couples.

The study sample is 18-30 years old heterosexual couples. The reason for the specific age interval is both the rate of infidelity and mate poaching behaviors emerge highly during college ages (Schmitt, 2004; Widermeran and Hurd 1999). Participants were excluded from the data due to at least one of the following reasons: (1) giving responses with an unassigned couple code, (2) failing to answer the quality check question in the survey, (3) giving inconsistent responses to objective questions about each other, which were the romantic relationship type (e.g., married, cohabitating) and relationships duration (± 1 year is accepted). Half-filled data were removed due to the dyadic analysis. In the end, 117 couples remained as a final sample (the data cleaning process was presented in Appendix 1). The sample characteristics are given in Table 2.1.

The research's hypotheses and data analysis technique were pre-registered (https://osf.io/xfutq/). The data were collected through the online platform Qualtrics during May and June 2023. The Research Ethics Council of Sabancı University approved this study (Protocol No: FASS-2022-51). In this study, convenience sampling was used. The participants were found mostly by contacting the

Table 2.1 Sample characteristics

Variables	*Mean*	*SD*	*Range*	*Frequency*	*%*
Relationship Length (Month)	26.92	25.99	1-135		
Age (M)	23.22	3.09	18-30		
Age (F)	22.49	2.98	18-30		
Relationship Type					
Have a romantic partner and do not live together				194	82.9
Have a romantic partner and living together				28	12
Married				12	5.1

Notes: M: male; F: female

social network of the researcher and by hanging research posters on the university campus. Firstly, participants filled out an application form to convey their intention to participate in the study. They stated both their and their partner's names and, in addition, their contact information. After completing the application form, Couple Numbers were sent to their contact addresses. Their responses to the study were collected through a separate survey, which they filled out by themselves, not together. Hence, their identity information and responses were not in the same data file. In this way, it was possible to match participants' responses as a couple and run the dyadic analysis.

For a pilot study, data were collected from 20 couples. The reason for the pilot study is to see whether there is any misinterpretation by participants for any Turkish adaptation of the question of the attraction to alternatives and check the Cronbach Alpha value for them. After completing the application form, the link for the main study was given through their contact information with Couple Numbers. Both the pilot and main study were conducted in Turkish and lasted around 15 minutes. Firstly, participants approved the consent form. Then, the order of the scales was as follows: (1) attraction to alternatives, (2) emotional jealousy, (3) commitment, and (4) life history strategies. For couples who completed the main study successfully, each partner received a market coupon worth 20 Turkish Liras or course credit, depending on their choices.

2.2 Measures

2.2.1 Demographic Characteristics Form

In the demographic characteristics form, people filled in their own age, the age of their partner, the type of relationship they were in, and the duration of the relationship. The relationship type had options of having a romantic relationship

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but not living in the same house, cohabitating, and being married.

2.2.2 Attraction to Alternatives (Extradyadic Attraction)

Attraction to alternatives was measured by the adapted version of the scale used by Neal and Lemay (2019). In their study, items were prepared for a daily dairy study based on a day-to-day perception of attraction. In this study, items were translated into Turkish and converted into more indirect versions not to provoke any discomfort considering the Turkish cultural norms. Both partners rated their attraction to alternatives and their perception of their partner's attraction to alternatives. The adapted scale had six items, and higher scores indicated a higher attraction to alternatives. The period that participants were asked to focus on the adapted items was recent times. A sample item for one's attraction to alternatives was "There are times when I feel interested in having a romantic encounter with someone other than my partner." The same questions were asked to assess one's perception of the partner's attraction to alternatives. A sample item for that purpose was "There are times when my partner feels interested in having a romantic encounter with someone other than me." The Likert points ranged from 1- "Completely Disagree" to 7- "Completely Agree." The Cronbach Alpha of the items was satisfactory for the attraction to alternatives in the pilot study (α =.79) and on the main study (α =.82) and the perceived partner's attraction to alternatives on the pilot study (α =.75) and in the main study (α =.83).

2.2.3 Emotional Jealousy

The emotional jealousy subscale from the Multidimensional Jealousy Scale Short-Form (Elphinston et al. 2011) was used for assessing jealousy. The Turkish adaptation of the scale was made by Aykutoğlu (2021). The subscale had six items, and higher scores indicated higher emotional jealousy. A sample item was "My partner shows a great deal of interest or excitement in talking to someone of the opposite sex." Participants were asked to express their reactions to each statement. The Likert points ranged from 1- "Very Pleased" to 7- "Very Upset." In this study, the Cronbach Alpha of the scale was satisfactory (α =.84).

2.2.4 Commitment

The commitment level items from the Investment Model Scale (Rusbult et al. 1998) were used for assessing commitment. Beşikçi (2008) adapted the scale to Turkish. The subscale had four items, and one of them was a reverse-coded item, following: " I feel our relationship is likely to end in the near future." The Likert points ranged from 1- "Completely Disagree" to 6- "Completely Agree. Higher scores indicated a higher commitment to the current relationship. In this study, the Cronbach Alpha of the scale was satisfactory ($\alpha =.83$).

2.2.5 Life-History Strategies

The Mini- K Scale (Figueredo et al. 2006) was used for assessing faster and slower life history strategies. Turkish adaptation of the scale was made by Tarakçı (2020). A sample item was "I would rather have one than several sexual relationships at a time." The Likert points on the scale range from 1- "Completely Disagree" to 5- "Completely Agree." Lower scores meant faster strategy, while higher scores meant slower strategy on the life history continuum. In this study, the Cronbach Alpha of the scale was satisfactory ($\alpha =.74$).

2.3 Data Analysis Strategy

Multilevel analyses based on the Truth and Bias Model (West and Kenny 2011) were conducted by SPSS Mixed Models. Analyses were modified through the syntax files of Purol and Chopik (2023) and Dobson, Kim, and Impett (2022).

The primary model could be stated as follows:

$$JCi = b_0 + tT_{Ci} + bB_{Ci} + E_i$$

All three variables, the truth, the perception, and the bias variables, were centered on the grand mean of the truth (i.e., the partner's report of attraction to alternatives). Through the centering, it is possible to examine how much perception shifts on the same continuum. The subscript C represented which variables were grand mean centered according to the truth variable. The subscript i represented the perceiver.

JCi was person i's perception of their partner's attraction to alternatives, b0 or the intercept shown the directional bias (i.e., the extent that a person is biased to perceive their partner as more or less attracted to alternatives than their partner is). Negative and positive intercepts indicated underperception and overperception (H1), respectively. TCi was the truth variable (i.e., the partner's actual level of attraction to alternatives); t was the truth force (i.e., the extent to the effect of the partner's actual attraction to alternatives on the person i's perception). A significant positive value of truth force (t) would indicate that tracking accuracy exists (H3). BCi was the bias variable (i.e., for testing projection), and b was the bias force (i.e., the degree of the effect of a person i's own attraction to alternatives on their perception). A significant positive value of bias force (b) would indicate the existence of projection (H2). Ei represented the error variance.

For estimating moderation, jealousy, commitment, life history strategies, and gender were included separately as moderator variables in the primary model explained above. Adapted versions of the equation for each analysis (H4-H8) could be stated as follows:

$$\text{JC}_i = (b_0 + mM_i) + (tT_{Ci} + t_M T_{Ci} M_i) + (bB_{Ci} + b_M B_{Ci} M_i) + E_i$$

A moderator variable (i.e., M_i) was centered on the grand mean of the related moderator (i.e., jealousy, commitment, life history strategies). The overall effect of the moderator on the perception of person i was m (i.e., Estimating the effect of the moderator on the directional bias). Gender was coded as –1 and 1. The interaction between the moderator and the truth variable was expressed as TCiMi . The effect of the moderator on the truth variable was expressed as tM. BCiMi was the interaction between the moderator variable and the bias variable. bM was the effect of the moderator variable on the bias force.

3.   RESULTS

3.1 Descriptive Statistics and Correlations

Mean differences across partners and correlations between variables were presented in Tables 3.1 and 3.2, respectively. The average for both males and females' attraction to alternatives scores and for both males and females' perceived attraction to alternatives, were lower than the midpoint of the scale. In contrast, the average for both males and females' jealousy scores were higher than the midpoint of the scale. Similarly, the average for both males' and females' commitment scores were higher than the midpoint of the scale. The average for both males and females' life history scores were higher than the midpoint of the scale, implying a slower strategy. Only the life history strategy had a significant gender difference, women stated a slower life history strategy than men. For males, attraction to alternatives with perceived partner's attraction to alternatives, commitment and life history strategy was significantly correlated. Perceived partner's attraction to alternatives was significantly negatively correlated with commitment, jealousy, and life history strategy. Commitment and life history strategy were positively correlated. For females, the perceived partner's attraction to alternatives was significantly correlated with commitment and jealousy. Perceived partner's attraction to alternatives of males and females was positively and commitment of males and females was negatively correlated.

Table 3.1 Gender differences between variables

		N	Possible range	Mean	SD	t (232)	p	95% CI: LB	95% CI: UB
ATA	M	117	1-7	1.61	1.17	-.13	.90	-.32	.28
	F	117		1.63	1.17				
PATA	M	117	1-7	1.40	.90	-1.55	.12	-.44	.05
	F	117		1.60	1.01				
Jealousy	M	117	1-7	5.77	.88	.041	.97	-.22	.24
	F	117		5.77	.92				
Commitment	M	117	1-6	4.46	.57	1.50	.15	-.04	.25
	F	117		4.36	.55				
LHT	M	117	1-5	3.67	.52	3.68	.001**	.11	.38
	F	117		3.42	.50				

Note ATA: attraction to alternatives; PATA: perceived partner's attraction to alternatives; LHT: life history strategy; M: male; F: female; **$p < .01$. Lower scores on the LHT mean faster strategy, while higher scores represent slower strategy.

Table 3.2 Correlations between study variables based on gender

		Male				
		1	2	3	4	5
	1. ATA	-.01	.61**	-.05	-.59**	-.26**
	2.PATA	-.01	.22*	-.19*	-.47**	-.19*
Female	3. Jealousy	.08	-.34**	.17	.12	.16
	4.Commitment	-.06	.30**	-.15	-.26**	.35**
	5.LHT	-.13	- .17	.17	-.07	-.03

Note The correlations between female and male on the same factors are written in the diagonal; ATA: attraction to alternatives; PATA: perceived partner's attraction to alternatives; LHT: life history strategy; lower scores on LHT mean faster strategy, while higher scores mean slower strategy; * = $p < .05$; ** = $p < .01$.

3.2 The Truth and Bias Main Model Analysis

The result of the main model is presented in Table 3.3. The remaining analyses and results can be accessed via the output on the OSF. The intercept (directional bias) for the main model was significant. Negative directional bias indicates that there is an underestimation of the partner's attraction to alternatives. H1 was not supported. There is a significant tracking accuracy. It means that individuals track their partners' attraction to alternatives accurately. The last component,

projection, indicates that individuals projected their attraction to alternatives onto their partners. H2 and H3 were supported.

Table 3.3 Main results of the truth and bias Model

Model Component	b	SE	t	p	95 % CI: LB	95% CI: UB
Directional bias	-.14	.05	-2.75	.007	-.28	-.04
Tracking accuracy	.27	.04	4.87	<.001	.19	.3
Projection	.38	.04	8.67	<.001	.30	.47

Note CI = confidence interval; LB = lower bound; UB = upper bound

3.3 Moderating Effect of Jealousy on the Truth and Bias Model

In the analysis with the moderation of emotional jealousy (Table 3.5), it was found that jealousy was associated with higher tracking accuracy and lower projection. However, there is no significant association between directional bias. This means no difference in levels of jealousy in over/underperceiving a partner's attraction to alternatives. H4 was not supported.

Table 3.4 Moderation of jealousy

Model component	b	SE	t	p	95 % CI: LB	95 % CI: UB
Directional bias	-.09	.05	-1.65	.10	-.20	.02
Tracking accuracy	.19	.05	4.12	<.001	.10	.28
Projection	-.24	.06	-4.08	<.001	-.35	-.12

Note CI = confidence interval; LB = lower bound; UB = upper bound

3.4 Moderating Effect of Gender on the Truth and Bias Model

The gender effect was coded (1 = female, 1 = male) and added to the main model. The result is presented in Table 3.4. This moderator-included model revealed a first-order effect of gender. The only significant parameter is projection, and it means females stated lower projection than males. Gender was not significantly associated with directional bias or tracking accuracy, suggesting no difference between males and females in over/underperceiving or tracking their partner's attraction to

alternatives.

Table 3.5 Moderation of gender

Model component	b	SE	t	p	95 % CI: LB	95 % CI: UB
Directional bias	.10	.05	1.82	.07	-.01	.20
Tracking accuracy	.08	.05	1.83	.07	-.01	.17
Projection	-.11	.04	-2.39	.02	-.20	-.02

Note CI = confidence interval; LB = lower bound; UB = upper bound

3.5 Moderating Effect of Commitment on the Truth and Bias Model

Commitment was also added to the main model as a moderator. The results are presented in Table 3.6. It was found that commitment was associated with lower projection. However, there is no significant association between directional bias and tracking accuracy. This means no difference in levels of commitment in over or underperceive a partner's attraction to alternatives and the level to tracking partner's attraction to alternatives. H5 and H6 were not supported.

Table 3.6 Moderation of commitment

Model component	b	SE	t	p	95 % CI: LB	95 % CI: UB
Directional bias	-.17	.10	-1.14	.25	-.32	.08
Tracking accuracy	-.06	.07	-.84	.40	-.20	.08
Projection	-.22	.08	-2.80	.006	-.37	-.06

Note CI = confidence interval; LB = lower bound; UB = upper bound

3.6 Moderating Effect of Life History Strategy on the Truth and Bias Model

Life history strategy was added to the main model as the final moderator. The results are presented in Table 3.7. Lower scores meant a faster life history strategy, while higher scores meant a slower life history strategy. It was found that slower life history was associated with negative directional bias and lower projection. Results can also be interpreted as a faster strategy was associated with an overperception of

partner's attraction to alternatives and higher projection. H7 was supported. However, there was no significant association between life history strategy and tracking accuracy. This means that there is no difference in fast or slow life history strategy in the level of tracking a partner's attraction to alternatives. H8 was not supported.

Table 3.7 Moderation of the life history strategy

Model component	b	SE	t	p	95 % CI: LB	95 % CI: UB
Directional bias	-.23	.10	-2.34	.02	-.42	-.04
Tracking accuracy	-.12	.07	-1.71	.09	-.25	.02
Projection	-.27	.09	-2.89	.004	-.45	-.08

Note CI = confidence interval; LB = lower bound; UB = upper bound

4.   DISCUSSION

4.1 General Discussion

This study aimed to investigate whether individuals can accurately detect their partner's attraction to alternatives. Building on the findings of Neal and Lemay (2019) about the projection of one's attraction to alternatives to the partner, a cross-sectional study was conducted. This study extended the article by Neal and Lemay by including not only the projection but also directional bias and tracking accuracy based on the Truth and Bias Model (West and Kenny 2011. Further, the potential moderation roles of jealousy, gender, commitment, and life history strategies on the Truth and Bias Model components were examined.

Eight hypotheses were proposed in this study. First, we expected that participants would overperceive their partner's attraction to alternatives. The results showed the opposite: On average, participants were likely to underperceive their partner's attraction to alternatives (small effect size). Secondly, participants were also hypothesized to track their partner's attraction to alternatives somewhat accurately (medium effect size). Results confirmed this hypothesis: Participants were likely to track their partner's attraction to alternatives accurately (large effect size). The third hypothesis was that participants would project their attraction to alternatives to their partner. In line with this expectation, results revealed that such a projection of attraction to alternatives occurred in our participants. As the fourth hypothesis, high jealousy was expected to be correlated with the overperception of the partner's attraction to alternatives. However, there was no significant result for the moderating role of jealousy in the directional bias (i.e., over/under perception). In the fifth and sixth hypotheses, high commitment was proposed to be correlated with the underperception and tracking accuracy of the partner's attraction to alternatives, respectively. Nevertheless, neither of these hypotheses was supported: There was no significant correlation of commitment with directional bias or tracking accu-

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racy. The seventh hypothesis, that a faster life history strategy would be correlated with the overperception of the partner's attraction to alternatives, was confirmed. Lastly, a faster life history strategy was hypothesized to be correlated with the tracking accuracy of the partner's attraction to alternatives, but results revealed no such association. For an outlook on the results of this study, a meta-analysis of over 150 studies on romantic relationships and cognitive biases showed significant effect sizes for directional bias ($d = 0.006$), tracking accuracy, ($\beta =.24$) and projection ($\beta =.82$) (LaBuda et al. 2023). Below, each of these results is discussed in detail.

Additionally, the moderation roles of gender in the directional bias towards their partner's attraction to alternatives, tracking accuracy, and projection of the one's attraction to alternatives to the partner were examined for exploratory purposes. Results revealed that females had lower projection levels than males. Jealousy was correlated with higher tracking accuracy and lower projection. Moreover, commitment was correlated with a lower projection level, while a faster life history strategy was correlated with a higher level. The results of these exploratory examinations will be elaborated below.

Surprisingly, participants were found to underperceive their partner's attraction to alternatives. This result would be due to individuals' general motivation to maintain their relationships (Finkel et al. 2002). Continuing the current relationship would bring various benefits, such as the likelihood of reproduction, the receipt of social support, and dyadic coping in cases of stress (Ogolsky et al. 2017). The underperception of attraction to alternatives may enable the individual to benefit from these advantages, thus increasing the individual's chances of survival.

An alternative explanation to the unexpected finding of underperception would be related to the average relationship duration in the sample, which was around two and half years, which could be perceived as a relatively long duration for young adulthood. Perhaps romantic relationships of individuals who overperceived their partner's attraction to alternatives have already dissolved and could not last for two years. In line with this speculation, infidelity is more likely to happen in shorter relationships (DeMaris 2009) and young adult populations (Sanchez et al. 2017; Schmitt and Buss 2001). Since the amount of investment in the relationship is low at the beginning of the relationship, commitment may be low accordingly (Rusbult 1980). Relationships may dissolve after the infidelity act, making them shorter and ineligible for inclusion in this study's population. Further studies should test these ideas in recently dating people.

In line with our hypothesis, participants were able to accurately track their partner's attraction to alternatives. Individuals increase their chances of survival, social sup-

port, and dyadic stress coping (Ogolsky et al. 2017) by being motivated to secure and maintain their relationships (Finkel et al. 2002). Furthermore, overlooking the partner's attraction to alternatives can have serious consequences (Neal and Lemay 2019). The route that may create genetic uncertainty (e.g., uncertainty about fatherhood) may mean the loss of all the investment in the partner and offspring (Buss and Shackelford 1997).

As Neil and Lemay (2019) mentioned, the focus of studies on attraction to alternatives and infidelity is more on the cues that help determine any extradyadic involvement, such as the partner's preference to spend less time in the relationship and lack of sexual interest. With the concept of projection of attraction to alternatives introduced, it becomes clear that the perception of attraction to alternatives is more complex. It has been revealed that the individual has a cognitive bias that is positioned much earlier in the act of infidelity, and this bias can lead to justification and reduce guilt for being attracted to alternatives. When the individual is attracted to alternatives, believing that the partner similarly is attracted to alternatives, paves the way to infidelity.

The perception of jealousy in Turkish culture may have an unexpected effect of jealousy on directional bias towards the partner's attraction to alternatives. In this study, jealousy was, on average, above the midpoint of the scale, representing a relatively high level. Although high jealousy is common, the meanings attributed to it may differ from the evolutionary perspective. In Turkish culture, the belief that "one who loves becomes jealous" is quite common. This belief puts jealousy as a prerequisite for feeling loved (Seven 2019). In addition, this understanding normalizes jealousy and its high levels (Kızıldağ 2017). The fact that Turkish culture perceives jealousy as a necessity and the equivalent of love may not be in line with the explanation of jealousy put forward by the evolutionary perspective.

The elevating effect of jealousy on tracking accuracy could be related to sensitivity. High jealousy makes individuals more sensitive to their partner's attraction to alternatives (Neal and Lemay 2014). With jealousy, more effort is made to find clues of romantic and sexual infidelity (Buss et al. 1999). Mate-guarding behaviors can increase, in turn, in response to the clues, to protect the partner from a mate-poacher (Neal and Lemay 2014). Selective perception and high sensitivity to clues of romantic and sexual infidelity might have formed more mate-guarding behavior and a positive correlation with tracking accuracy.

Exploratory analysis showed that high jealousy was negatively correlated with the projection of one's attraction to alternatives to the partner. The negative correlation in projection means that there is a dissimilarity between one's own attraction to

alternatives and the perception of the partner's attraction to alternatives compared to the baseline. In other words, this perceived dissimilarity can be considered to have a positive effect on the distance between one's attraction to alternatives and the perceived partner's attraction to alternatives. This can be possible in two ways: either by changing the amount of one's own attraction to alternatives or the perception of the partner's attraction to alternatives. Since someone with high jealousy generally has a high level of commitment, being attracted by alternatives is not common (Rydell et al. 2004). However, high jealousy is triggered by the perception that the partner is attracted to alternatives (Simpson et al. 1995). Based on this, the perception of the partner's attraction to alternatives, which is associated with high jealousy, may play a role in the negative correlation in projection.

With an exploratory examination of the moderation effect of gender on the directional bias, tracking accuracy, and projection of attraction to alternatives, it was found that males showed higher projection than females. It is possible to explain this situation from the perspective of gender and gender roles towards infidelity in Turkish culture. Males expressed higher intention and engaged in infidelity than females (Anlatan 2019; Şatıroğlu 2017; Toplu-Demirtaş and Tezer 2013; Müezzinoğlu 2014). Males' projection of their attraction to alternatives onto their partner may help alleviate guilt and justify their attraction (Neil and Lemay 2019). This bias may have influenced males to adopt more permissive attitudes towards infidelity (Anlatan 2019; Toplu-Demirtaş et al. 2014). Therefore, the projection of attraction to alternatives may have a facilitating role in males' attraction to alternative partners, turning this into infidelity.

The reason there is no difference according to gender for directional bias may be due to assessment. According to an evolutionary perspective, the sensitivity of males to sexual infidelity-related cues and females' romantic infidelity-related cues also affects the perceived partner's attraction to alternatives in this context (Buss and Hamilton 2000). If sexual attraction and romantic attraction to alternative partners had been measured separately, an inference could be made regarding this. However, since sexual and romantic attraction were assessed together in this study, no results were obtained according to the propositions put forward by the evolutionary perspective according to gender.

Unexpectedly, high commitment was not correlated with underperception or tracking accuracy of the partner's attraction to alternatives. Cognitive dissonance may play a role in this issue. People who consider themselves committed may avoid thinking about their or their partner's infidelity to prevent psychological discomfort (Foster and Misra 2013). In order to cope with this discomfort, the individual

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must use rationalization or change their attitude about it, which has an impact on the perception of infidelity (Alexopoulos 2021). Using rationalization or changing attitudes can lead individuals to assess situations differently when considering alternatives. Thus, it may have created a confounding effect on tracking accuracy. The average commitment values in the sample were higher than the midpoint of the scale, and the standard deviation and variance of the responses were low, respectively, .55 and.31, causing the results to be consistent and clustered. In addition, the average relationship duration of the participants is around 2.5 years, which leads to the inference that the sample is generally highly committed. Therefore, no significant results regarding underperception may have been found.

The exploratory analysis showed that high commitment was correlated with lower projection. The perceived dissimilarity could be related to both changes in one's attraction to alternatives and the perception of the partner's attraction to alternatives. High-committed individuals have less attraction to alternatives (Park and Park 2021). In addition, while romantic relationships are threatened by external factors such as alternatives and opportunities for infidelity, this can have an impact on commitment. Gonzaga and his colleagues (2001) found that commitment can be enhanced and preserved when relationships are tested by threats. A committed individual may claim that even though there are alternatives around the partner and the partner has an attraction to alternatives, the attraction will not turn into infidelity in such a test because the committed individual has a high level of trust in the partner.

The expected moderator effect of the fast-life history strategy on overperception was confirmed. Motivated cognition plays a significant role in the emergence of overperception in individuals with a fast strategy. Individuals with a fast-life history strategy, prioritizing reproduction before death, tend to form more short-term relationships (Szepsenwol and Simpson 2019). Constantly thinking about this goal can also influence their judgments about their partner. Due to this motivated mindset, the individual may infer that the partner is attracted to alternatives too (Neal and Lemay 2019). This overperception may help the individual, with a fast strategy, form another new short-term relationship and make it possible to reproduce before death, which is their main goal (Wilson et al. 2011). This situation can be used to explain the fast strategy and poorer relationship outcomes that lead to the dissolution of relationships, such as manipulative acts (Simpson et al. 2011), nonconstructive communication in conflict (Loureto et al. 2022), intimate partner violence, and interpersonal aggression (Figueredo et al. 2018). These outcomes may cause problems in maintaining the relationship, thus contributing to the dissolution of the existing relationship (Figueredo et al. 2018) and increasing the fitness of

the person with the fast strategy by establishing a relationship with a new partner (Wilson et al. 2011).

Surprisingly, there was no effect of the fast-life history strategy on tracking accuracy. Someone with a fast strategy internalizes the stress, uncertainty, and mortality characteristics of the environment they are exposed to and looks at the world from this perspective (Simpson et al. 2017, 11–14). The individual evaluates romantic relationships and the environment through a filter of mistrust (Szepsenwol and Simpson 2019). Even if the individual is vigilant against possible threats from the environment and relationships and perceives threats quickly, there may be other factors that balance this. High threat perception can lead to evaluating non-existent situations as if they existed (Andrews et al. 2008). Even if the partner is not attracted to the alternatives, the person with a faster strategy may find themselves making incorrect judgments. In addition, if the person with the fast strategy also had a high perception of the partner's attraction to alternatives, there would be high tracking accuracy. The fact that both situations were possible in the sample of the study when averaged, may have caused it to be non-significant. Because of such a two-pronged situation, the individual with a fast strategy may not have been able to follow the partner accurately due to the wrong evaluation of the (maybe nonexistent) threats that could be quickly (and sometimes wrongly) detected.

The exploratory analysis showed that a faster strategy was correlated with higher projection. This situation may be due to both one's attraction to alternatives and the perception of the partner's attraction to alternatives. A person with a fast strategy turns to more alternatives and tries to establish short-term relationships (Wilson et al. 2011). In addition, due to enhanced threat perception (Szepsenwol and Simpson 2019), the individual thinks that the partner may also be attracted to others. Thus, projection occurs when there is an increase in both the person's own attraction to alternatives and their perception of the partner's attraction to alternatives. In this light, projection can be seen as one of the strategies of individuals who prioritize quick decisions to achieve their goals and adapt to the environment, thereby enhancing their fitness (Kaplan and Gangestad 2004).

4.2 Strengths, Limitations, and Future Directions

This research has several strengths. Firstly, the concept of projection of attraction to alternatives, first introduced by Neil and Lemay (2019), was replicated in another culture. Based on the Truth and Bias Model, not only projection but also

directional bias and tracking accuracy were also tested. Moreover, using the evolutionary perspective as a theoretical framework, the moderating effects of gender and relationship factors such as commitment and jealousy were examined. Finally, life history strategy, which is understudied in the Turkish sample, was included in this research as a moderator.

This study also has several limitations that need to be considered for future studies. First, it was a cross-sectional study that could not address any causality. An experimental study involving manipulating a threat induction related to attraction to alternative partners (cf. Birnbaum et al. 2019) and/or longitudinal research is awaited. Furthermore, in this study, participants were not asked if they had monogamous or consensually non-monogamous (CNM) relationships. However, there are substantial differences between monogamous and CNM relationships in the scope of alternative partners. CNM relationships are more likely than monogamous ones to have an allowance to engage in romantic and sexual relationships with different partners depending on the agreement (Haupert et al. 2017). Individuals with CNM probably perceive alternative partners as less threatening to their relationship because they express less jealousy than monogamous people (Conley et al. 2017). Based on that, the dynamics of attraction to alternatives and perception of the partner's attraction to alternatives would differ depending on the (non-)monogamous structure of relationships. For example, one of the possible reasons for the projection of attraction to alternatives onto the partner is alleviating guilt, which might not be needed in CNM relationships. For future studies, adding a comparison group with CNM relationships should be considered to examine how the allowance of having relationships with alternatives impacts biases related to the perception of the partner's attraction to alternative partners.

Another limitation is that both romantic and sexual attraction types were assessed together as one attraction to alternative partners variable in this study. This is because, in Neal and Lemay's study (2018), attraction-to-alternative measurement consisted of romantic and sexual attraction questions. However, the evolutionary perspective distinguishes sexual and romantic attraction. Future studies should reconsider developing a new assessment or a statistically validated scale for measuring sexual and romantic attraction separately.

Next limitation is regarding samples and analysis. Convenience sampling was used in this study. Thus, both dating, cohabiting, and married participants were included in the study. Although the majority of the sample was dating participants (%82.9), such a distribution may have affected the results. Further, there was no restriction on relationship duration as a condition for participating in the research, and as a

result, the average relationship duration in the sample was around two and a half years, which makes the sample highly long-term oriented. It is recommended that data be collected from a specific group or made in comparison between groups, such as dating and married couples, in future studies. In addition, it was not checked whether there was a two-way or third-way interaction effect between moderators. It is recommended that future studies analyze whether there is an interaction effect between moderators.

Lastly, in this study, jealousy, gender, commitment, and life history strategies were used as moderator variables. However, other variables, such as attachment style and sociosexual orientation, may also impact the perception of the partner's attraction to alternatives. Both avoidant attachment (Dewall et al. 2011) and unrestricted sociosexual orientation (Fletcher et al. 2013) show heightened interest in alternative partners, and permissive perception of extradyadic involvements related to themselves and their partner would affect directional bias, tracking accuracy, and the projection of the attraction to alternatives. Individuals with avoidant attachment were found to report more less negative towards their current partner's extradyadic involvement, show more higher attention toward alternative partners, and engaging in extradyadic involvements than secure and anxiously attached ones (Dewall et al. 2011). Similarly, individuals with unrestricted sociosexual orientation (i.e., a high willingness to form uncommitted relationships) reported a more permissive perception of extradyadic involvements, an interest in alternative partners, and engaging in extradyadic involvements than restricted ones (Wilson et al. 2011). The avoidant attachment and unrestricted orientation could lead to an underperception and projection of attraction toward alternatives. Although life history theory explains how life history strategies lead to variance in attachment and sociosexual orientation (Szepsenwol and Simpson 2019), measuring these factors and examining their correlations with biases is recommended.

To conclude, the projection of one's attraction to alternatives to the partner is found in the literature, and it has been suggested that more research should be done on this concept (Neal and Lemay 2019). In this research, the perception of attraction to alternatives was examined with different biases and moderators using the Truth and Bias model (West and Kenny 2011). The findings of this study highlighted how different relationship factors affect perceptions of attraction to alternatives and provided guidance for future studies on attraction to alternatives and infidelity.

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APPENDIX A

Table A.1 Summary table for the data cleaning

Number of rows in the original data	330
Did not consent to the study (Said no to or did not respond to any question, so did not see the rest of the survey)	50
Did not enter any gender information	8
Only one partner entered the Couple Number at the beginning of the survey (so did not see the following Qs)	14
Deleted multiple entries from the same participants and kept their first data.	2
First Total	**330-74=256**
	Exclusions as two rows (as couple)
Failed the attention check question	4
Inconsistency between the partners in terms of the duration of the relationship	1
Inconsistency between the partners in terms of the type of the relationship	3
Inconsistency between the partners in terms of heterosexual relationship	3
Excluded Couples	**11 couples 22 rows**
Sample Size	**256 - 22 = 234**
Couple Size	**117**