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1 Introduction

Throughout political history, tyrants, and despots have influenced great power over large swaths of land and communities. One common thread amongst these individuals is how they wield their great power, often through dominant tactics such as threats and political subversion. Recent history has shown with individuals like Donald Trump, Kim Jong-Un, and Rodrigo Duterte who display authoritarian traits often wield their power through fear and threats of violence (Bernstein, 2020; “Glamorizing Dictators,” 2018; Kirby, 2021). How this power is wielded is often different for each individual. Some individuals such as Duterte and Bolsonaro wielded their power more dramatically than the likes of Trump. Individuals wielding power need not be tyrants such as the former. Individuals like Angela Merkel used her position and leadership skills to be a world leader in most negotiations. While individuals more well known for their status demonstrated their power through prestige motives. To better understand how individuals such as world leaders or opinion makers gain and wield their power over others. Research in this field is often difficult to research yet strides have been made to understand power, namely through research in moral judgment and decision-making such as power orientation.

1.1 Dominance, Prestige, and Leadership orientation

Research in power desire motives has focused on three subdomains: dominance, leadership, and prestige (Suessenbach et al., 2019). Each of these three different power motives is explained as to different ways or methods that individuals in power sought power or were bestowed upon them. Often these dominant individuals will wield their power with force and potentially cause risk to themselves to hold onto that power.

1.1.1 Dominance

The dominance motive is one of the more researched methods and well-depicted power motives. Individuals with a dominant orientation display the more primal of human behavior. These individuals will seek power through direct methods such as asserting dominance, control over resources, or physically assaulting someone (Johnson & Bruner, 2012; Winter, 1993). Early research in dominance motives has shown that acts of dominance ranging from asserting physical dominance over another to physical displays of violence has been shown in many mammalian species, including humans (Petersen et al., 2018; Rosenthal et al., 2012).

81 Individuals high in dominance are often high in Machiavellianism, nar-
 82 cissism, and often are prone to risky behavior (discussion further in the next
 83 section). Continued research has hinted at a possible tendency for males to dis-
 84 play these dominant seeking traits more than females (Bareket & Shnabel, 2020;
 85 Sidanius et al., 2000). When high dominance individuals assert themselves they
 86 are doing so to increase their individual sense of power (Anderson et al., 2012;
 87 Bierstedt, 1950). Asserting one's own sense of dominance over another can be
 88 a dangerous task. In the animal kingdom, it can often lead to injury. While,
 89 in humans asserting dominance can take a multitude of actions such as leering
 90 behaviors, physical distance, or other non-verbal methods to display dominance
 91 (Petersen et al., 2018; Witkower et al., 2020). Power from a dominant perspective
 92 is not always bestowed upon someone. Often, high dominance individuals will
 93 take control and hold onto it.

94 **1.1.2 Prestige**

95 Contrary to the dominant motivation of using intimidation and aggression
 96 to gain more power, a prestige motivation or prestige, in general, is bestowed
 97 upon an individual from others in the community (Maner & Case, 2016;
 98 Suessenbach et al., 2019). Different from the dominance motivation, a prestige
 99 motivation is generally unique to the human species (Maner & Case, 2016).
 100 Due in part to ancestral human groups being smaller hunter-gatherer societies,
 101 individuals that displayed and used important behaviors beneficial to the larger
 102 group were often valued and admired by the group. Therein, the social group
 103 bestows the authority onto the individual. Generally, this type of behavior
 104 can be passively achieved by the prestigious individual. However, this does
 105 not remove the intent of the actor in that they too can see prestige from the
 106 group, but the method of achieving that social status greatly differs from that of
 107 dominance-seeking individuals.

108
 109 Apart from dominance-motivated individuals that continually have to fight
 110 for their right to have power over others, individuals that seek or were given power
 111 through a prestige motivation are not generally challenged in the same sense as
 112 dominant individuals. Displaying behaviors that the community would see as
 113 beneficial would endear them into the community making the survival of the
 114 community as a whole better (Maner & Case, 2016). Evolutionarily this would
 115 increase the viability of the prestigious individual and their genes. Similar to
 116 the dominance perspective, the prestige perspective overall increases the power
 117 and future survivability of the individual. However, due to the natural difference
 118 between prestige and dominance, dominance-seeking individuals are challenged

119 more often resulting in more danger to their position (Johnson & Bruner, 2012).

120 **1.1.3 Leadership**

121 With a shared goal a leader is someone that takes initiative and attracts
122 followers for that shared goal (Van Vugt, 2006). Leadership is an interesting
123 aspect of behavior in that it is almost exclusive to human interaction. Dis-
124 cussions by evolutionary psychologists point to the formation of early human
125 hunter-gatherer groups where the close interconnectedness created a breeding
126 ground for leadership roles. As early humans began to evolve it would become
127 advantageous for individuals to work together for a common goal (King et al.,
128 2009). In the case of some situations, an individual with more knowledge of a
129 situation would take charge. Multiple explanations of the evolution of leadership
130 exist such as coordination strategies, safety, along with evidence for growth in
131 social intelligence in humans.

132
133 An interesting aspect of leadership motivation is the verification of the
134 qualities of the leader by the communities. Individuals that are often put into
135 leadership roles or take a leadership role often display the necessary goals, qual-
136 ities, and knowledge to accomplish the shared/stated goal. However, this is not
137 always the case especially for those charismatic leaders where they could stay
138 on as a leader longer than the stated goal requires (Vugt & Ronay, 2014). Tra-
139 ditionally, leadership was thought to be fluid in that those with the necessary
140 knowledge at the time would be judged and appointed as the leader. However,
141 these charismatic leaders use their charisma, uniqueness, nerve, and talent to hold
142 onto their status.

143 **1.2 Risk**

144 Every time people leave the relative safety of their home, every decision
145 they make they are taking some form of risk. Financial risk is often discussed
146 in the media usually concerning the stock market. However, the risk is not
147 just present in finances but also in social interactions such as social risk, sexual
148 risk, health and safety risk, recreational, and ethical risks (Breakwell, 2007;
149 Kühberger & Tanner, 2009; Shearer et al., 2005; Weber et al., 2002). Each
150 individual is different in their likelihood and perception of participating in those
151 risks. Some will be more inclined to be more financially risky while others would
152 risk their health and safety.

153
154 Whether to engage in a risky situation is very complex depending on a
155 cost-benefit analysis. Do the positives outweigh the negatives? In practice, not

all individuals will do a cost-benefit analysis of a risky situation. Often, the timing of an event makes such an analysis disadvantageous. The benefits are often relative to the individual decision-maker. Differences emerge in the general likelihood to engage in risky behavior such that males tend to be more likely to engage in risky behaviors than their female counterparts. Women tended to avoid risky situations except for social risks.

1.3 The present study

The present study sought to further our understanding of dominance, prestige, and leadership motivations in human decision-making. Furthering this, we seek to bridge the connection between risk-taking behaviors, from diverse domains, and the dominance, prestige, and leadership orientations. Following the literature, we predicted that participants that were high in dominance orientation would be more likely to not only engage in risky behaviors but praise the benefits of participating in those behaviors. Individuals with prestige or leadership orientation.

2 Experiment 1

2.1 Methods

Participants were a convenience sample of 111 individuals from Prolific Academic’s crowdsourcing platform (www.prolific.io). Prolific Academic is an online crowdsourcing service that provides participants access to studies hosted on third-party websites. Participants were required to be 18 years of age or older and be able to read and understand English. Participants received £4.00, which is above the current minimum wage pro-rata in the United Kingdom, as compensation for completing the survey. The Psychology Research Ethics Committee at the University of Edinburgh approved all study procedures [ref: 212-2021/1]. The present study was pre-registered along with a copy of anonymized data along with a copy of the R code and supplemental materials are available at (<https://osf.io/s4j7y>).

2.2 Materials

2.2.1 Demographic Questionnaire

In a demographic questionnaire administered prior to the main survey, participants were invited to respond to a series of questions about their self-identified demographic characteristics such as age, gender, ethnicity, and ethnic origin.

190 **2.2.2 Dominance, Prestige, and Leadership Orientation**

191 The 18-item Dominance, Prestige, and Leadership scale, DoPL (Suessen-
192 bach et al., 2019), is used to measure dominance, prestige, and leadership orien-
193 tation. Each question corresponds to one of the three domains. Each domain is
194 scored across six unique items related to those domains (e.g., “I relish opportuni-
195 ties in which I can lead others” for leadership) rated on a scale from 0 (Strongly
196 disagree) to 5 (Strongly agree). Internal consistency reliability for the current
197 sample is $\alpha = 0.86$.

198 **2.2.3 Domain Specific Risk-taking Scale**

199 The 40-item Domain-Specific Risk-taking Scale, DOSPERT (Weber et al.,
200 2002) is a scale assessing individuals’ likelihood of engaging in risky behaviors
201 within 5 domain-specific risky situations: financial (“Gambling a week’s income
202 at a casino.”), social (“Admitting that your tastes are different from those of your
203 friends”), recreational (“Trying out bungee jumping at least once”), health and
204 safety (“Engaging in unprotected sex”), and ethical (“Cheating on an exam”)
205 situations. Each risky situation is then rated on a five-point Likert scale (1 being
206 very unlikely and 5 being very likely). Two additional five-point Likert scales
207 assess risk perception and expected benefits (1 being not at all risky and 5 being
208 extremely risky; 1 being no benefits at all and 5 being great benefits) respectively.
209 Example risky situations are “Admitting that your tastes are different from those
210 of a friend” and “Drinking heavily at a social function.” Internal consistency
211 reliability for the current samples for the 3 sub-domains are $\alpha = 0.85$, $\alpha = 0.90$,
212 $\alpha = 0.92$ respectively.

213 **2.3 Procedure**

214 Participants were recruited via a study landing page on Prolific’s web-
215 site or via a direct e-mail to eligible participants (Prolific Academic, 2018). The
216 study landing page included a brief description of the study including any risks
217 and benefits along with expected compensation for successful completion. Par-
218 ticipants accepted participation in the experiment and were directed to the main
219 survey (Qualtrics, Inc; Provo, UT) where they were shown a brief message on
220 study consent.

221 Once participants consented to participate in the experiment they an-
222 swered a series of demographic questions. Once completed, participants com-
223 pleted the Dominance, Prestige, and Leadership Scale and the Domain Specific
224 Risk-taking scale. The two scales were counterbalanced to account for order ef-
225 fects. After completion of the main survey, participants were shown a debriefing

statement that briefly mentions the purpose of the experiment along with the contact information of the main researcher (AI). Participants were compensated £4.00 via Prolific Academic.

2.4 Data analysis

Demographic characteristics were analyzed using multiple regression for continuous variables (age) and Chi-square tests for categorical variables (gender, race, ethnicity, ethnic origin, and education). Means and standard deviations were calculated for the relevant scales (i.e., DoPL and DOSPERT). All analyses were done using (R Core Team, 2021) along with (Bürkner, 2017) package.

The use of bayesian statistics has a multitude of benefits to statistical analysis and research design. One important benefit is through the use of prior data in future analyses. Termed as priors, is the use of prior distributions for future analysis. This allows for the separation of how the data might have been collected or what the intention was. In essence, the data is the data without the interpretation of the scientist.

All relevant analyses were conducted in a Bayesian framework using the brms package (Bürkner, 2018) along with the cmdstanr packages notes (Gabry & Cesnovar, 2021). In addition to the aforementioned packages, we used bayestestR, rstan, and papaja (Aust & Barth, 2020; Makowski et al., 2019; Stan Development Team, 2020).

2.5 Results

One hundred and eleven individuals completed the main survey. Of these individuals, 111 completed all sections without incomplete data and were therefore retained in most data analyses. In later analyses to account for outliers two participants had to be excluded from the dataset. Table 1 shows the demographic information for the participants. The average completion time for participants was 20M 58s ($SD = 10M 43s$).

2.5.1 Preregistered Analyses

We first investigated DoPL orientation on general risk preference (Figure 1). General risk preference was anecdotally explained by dominance orientation, participant gender, and participant age (see table 2).

2.5.2 Demographic and DoPL

All participants completed the dominance, leadership, and prestige scale (Suessenbach et al., 2019). Empirically, men have generally been more

Table 1*Participant demographic information (Experiment 1)*

Variables	*n* = 111
Age	
Mean (SD)	26.84 (9.21)
Median [Min, Max]	24 [18,61]
Gender	
Female	54 (48.6%)
Gender Non-Binary	2 (1.8%)
Male	55 (49.5%)
Education	
Primary School	4 (3.6%)
GCSes or Equivalent	8 (7.2%)
A-Levels or Equivalent	32 (28.8%)
University Post-Graduate Program	21 (18.9%)
University Undergraduate Program	44 (39.6%)
Doctoral Degree	1 (0.9%)
Prefer not to answer	1 (0.9%)
Ethnicity	
African	8 (7.2%)
Asian	6 (5.4%)
English	10 (9.0%)
European	77 (69.4%)
Latin American	2 (1.8%)
Scottish	2 (1.8%)
Other	6 (5.4%)

dominance-oriented in their behavior (Rosenthal et al., 2012). Following the literature, men tended to be more dominance orientated than women. The marginal posterior distribution of each parameter is summarized in Table #. Interestingly, older individuals tended to be more dominance-oriented than younger individuals.

2.6 Domain-Specific Risk-Taking

2.7 Interactions

When investigating dominance, prestige, and leadership motivations with domain-specific risk-taking findings supported the common expectations in the literature. Table 5 shows the interactions with like CI values. Dominance overall explained the relationship of DoPL orientation and preference, specifically for ethical, financial, social, health and safety, and recreational preference. Participant age and gender also appeared to affect recreational preference.

Table 2

Parameter	CI	CI_low	CI_high
b_Intercept	0.95	1.37	5.81
b_dominanceSum	0.95	1.07	4.91
b_leadershipSum	0.95	-3.88	-0.02
b_Gender1	0.95	-4.95	-1.09
b_Age	0.95	-4.80	-0.96

272 Following these findings, we investigated the effect of DoPL on general
 273 risk preference and found that dominance overall affected risk preference along
 274 with gender and age of the participant (Table 5).

275 2.8 Discussion

276 3 Experiment 2

277 3.1 Methods

278 Materials remain the same in terms of the (1) Demographic Questionnaire,
 279 (2) Dominance, Prestige, and Leadership Questionnaire, and (3) DOSPERT
 280 Questionnaire. However, we added the Brief-Pathological Narcissism Inventory to
 281 assess possible interactions of dominance and narcissism in risky decision-making.
 282 Materials and methods were approved by the University of ## Participants

283 Following experiment 1, participants were a convenience sample of 111
 284 individuals from Prolific Academic’s crowdsourcing platform (www.prolific.io).
 285 Prolific Academic is an online crowdsourcing service that provides participants
 286 access to studies hosted on third-party websites. Participants were required to be
 287 18 years of age or older and be able to read and understand English. Participants
 288 received £4.00, which is above the current minimum wage pro-rata in the United
 289 Kingdom, as compensation for completing the survey. The Psychology Research
 290 Ethics Committee at the University of Edinburgh approved all study procedures
 291 [ref: 212-2021/2]. The present study was pre-registered along with a copy of
 292 anonymized data and a copy of the R code is available at ([https://osf.io/](https://osf.io/s4j7y)
 293 s4j7y).

294 3.2 Materials

295 3.2.1 Brief-Pathological Narcissism Inventory

296 The 28 item Brief Pathological Narcissism Inventory (B-PNI; Schoenleber
 297 et al., 2015) is a modified scale of the original 52-item Pathological Narcissism

Inventory (PNI; Pincus et al., 2009). Like the PNI the B-PNI is a scale measuring individuals' pathological narcissism. Items in the B-PNI retained all 7 pathological narcissism facets from the original PNI (e.g., exploitativeness, self-sacrificing self-enhancement, grandiose fantasy, contingent self-esteem, hiding the self, devaluing, and entitlement rage). Each item is rated on a 5 point Likert scale ranging from 1 (not at all like me) to 5 (very much like me). Example items include "I find it easy to manipulate people" and "I can read people like a book."

3.3 Procedure

Participants were recruited via a study landing page on Prolific's website or via a direct e-mail to eligible participants (Prolific Academic, 2018). The study landing page included a brief description of the study including any risks and benefits along with expected compensation for successful completion. Participants accepted participation in the experiment and were directed to the main survey on pavlovia.org (an online JavaScript hosting website similar to Qualtrics) where they were shown a brief message on study consent.

Once participants consented to participate in the experiment they answered a series of demographic questions. Once completed, participants completed the Dominance, Prestige, and Leadership Scale and the Domain Specific Risk-taking scale. An additional survey was added (the novel aspect of experiment 2) where participants, in addition to the two previous surveys, were asked to complete the brief-pathological narcissism inventory. The three scales were counterbalanced to account for order effects. After completion of the main survey, participants were shown a debriefing statement that briefly mentions the purpose of the experiment along with the contact information of the main researcher (AI). Participants were compensated £4.00 via Prolific Academic.

3.4 Data analysis

Demographic characteristics were analyzed using multiple regression for continuous variables (age) and Chi-square tests for categorical variables (gender, race, ethnicity, ethnic origin, and education). Means and standard deviations were calculated for the relevant scales (i.e., DoPL and DOSPERT). All analyses were done using (R Core Team, 2021) along with (Bürkner, 2017) package.

The use of bayesian statistics has a multitude of benefits to statistical analysis and research design. One important benefit is through the use of prior data in future analyses. Termed as priors, is the use of prior distributions for future analysis. This allows for the separation of how the data might have been collected or what the intention was. In essence, the data is the data without the

334 interpretation of the scientist.

335 All relevant analyses were conducted in a Bayesian framework using the
336 brms package (Bürkner, 2018) along with the cmdstanr packages notes (Gabry &
337 Cesnovar, 2021). In addition to the aforementioned packages, we used bayestestR,
338 rstan, and papaja for analysis along with creation of this manuscript (Aust &
339 Barth, 2020; Makowski et al., 2019; Stan Development Team, 2020).

340 **3.5 Results**

341 **3.6 Preregistered Analyses**

342 **3.6.1 Demographic and DoPL**

343 **3.7 Domain-Specific Risk-Taking**

344 **3.8 Interactions**

345 **3.9 Discussion**

346 **3.10 Limitations**

347 **3.11 Future Implications**

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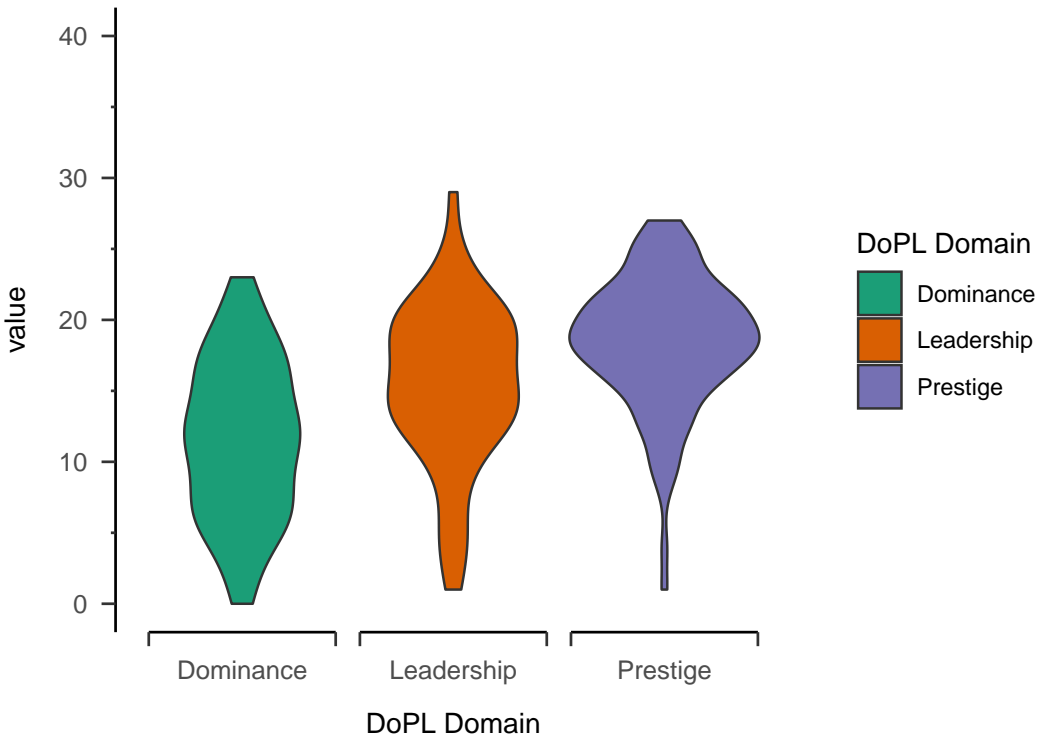
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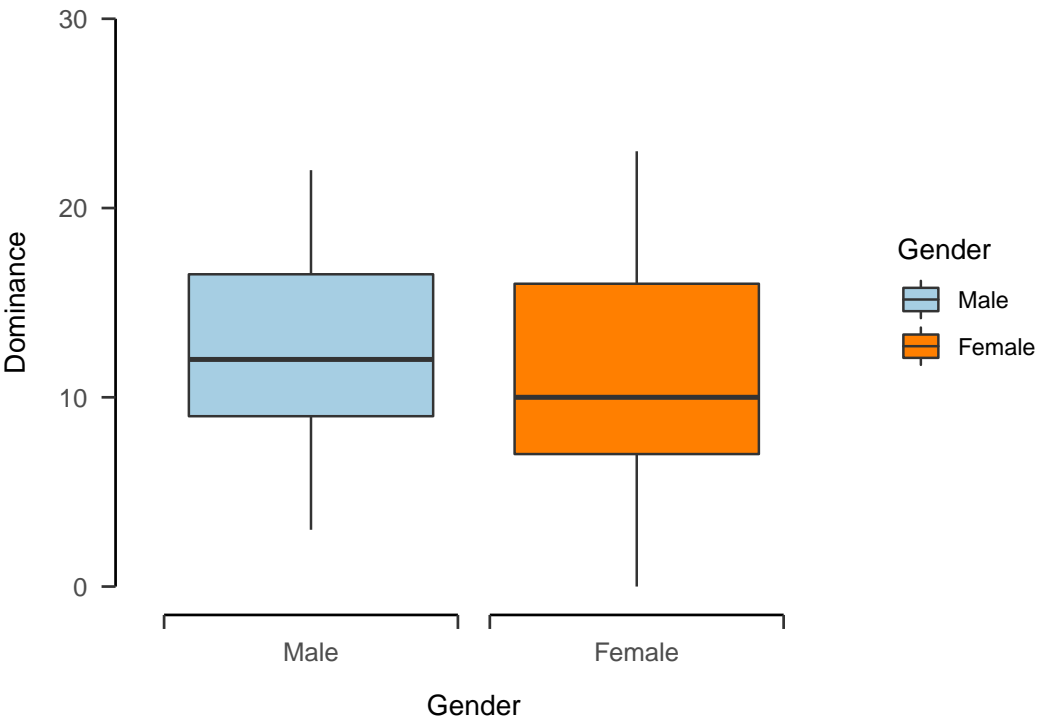
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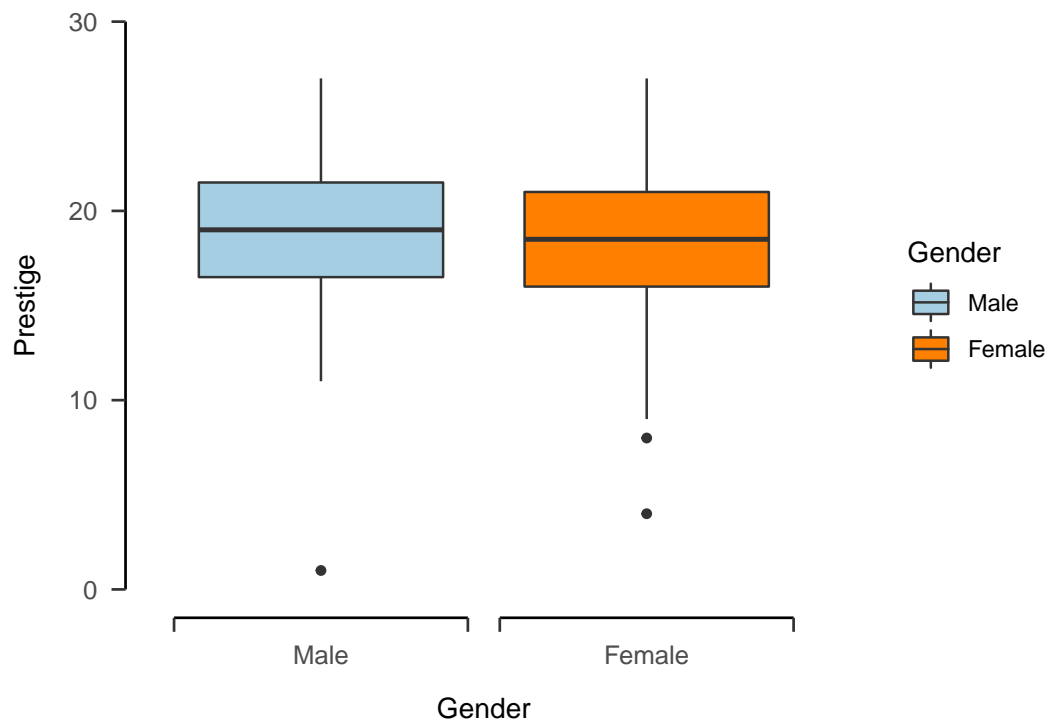
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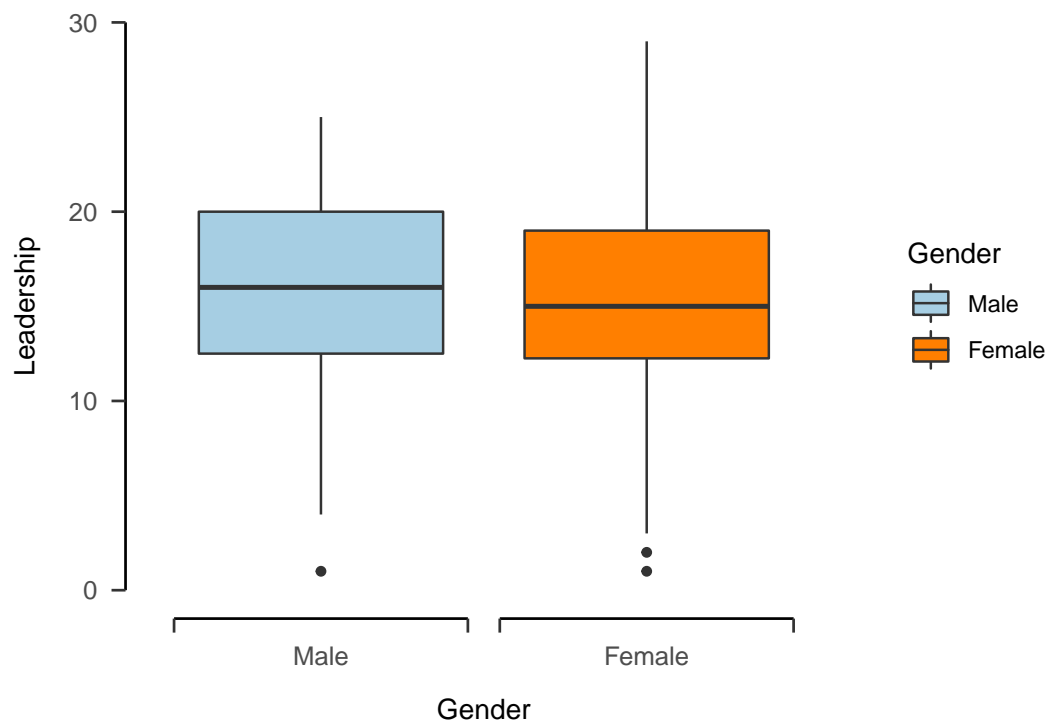
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446



447



448

Table 3

	Estimate	Est.Error	Q2.5	Q97.5
Intercept	3.62	1.13	1.41	5.86
dominanceSum	3.00	0.99	1.08	4.93
prestigeSum	0.09	0.99	-1.84	2.02
leadershipSum	-1.91	0.98	-3.85	0.02
Gender1	-3.02	0.99	-4.95	-1.08
Age	-2.86	0.99	-4.78	-0.93

Table 4

	Parameter	CI	CI_low	CI_high
5	b_ethicalPreference_Intercept	0.95	2.85	4.42
6	b_ethicalPreference_dominanceSum	0.95	0.61	1.71
14	b_financialPreference_Intercept	0.95	7.50	9.67
15	b_financialPreference_dominanceSum	0.95	0.14	1.59
41	b_socialPreference_Intercept	0.95	8.34	11.67
42	b_socialPreference_dominanceSum	0.95	0.60	2.87
23	b_healthAndSafetyPreference_Intercept	0.95	4.65	6.59
24	b_healthAndSafetyPreference_dominanceSum	0.95	0.41	1.77
32	b_recreationalPreference_Intercept	0.95	0.95	2.48
33	b_recreationalPreference_dominanceSum	0.95	0.66	1.74
29	b_recreationalPreference_Gender1	0.95	-1.83	-0.47
28	b_recreationalPreference_Age	0.95	0.06	0.87