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# The psychology of risk and power: Power desires and sexual choices

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Doctor of Philosophy

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## 111 1.1 Literature Review

112 1.1.1 *General Introduction*

113 Research in decision-making is not only concerned with understanding  
 114 monumental decisions done in a study or saving a life, but equally in more mun-  
 115 dane decisions such as understanding choosing what tea to drink in the morning,  
 116 what clothes to wear that day or whether a couple should have a divorce. Making  
 117 models of decisions can be difficult given uncertainty is involved along with risk  
 118 [citation]. For example, two adult men [or a man and a woman] that are intend-  
 119 ing to have sex need to make the decision of whether or not to use a condom.  
 120 Added uncertainty is involved with the decision-making process. One partner  
 121 may have multiple sexual partners while the other may have only had one, one  
 122 partner may have a sexually transmitted infection and might not feel the need  
 123 or feel comfortable with informing their partner of their status. Consequences of  
 124 not informing can have dire consequences on both partners.

125 In 2016, the year of most recent global data collection, there were 376  
 126 million necases of the four curable sexually transmitted infections, chlamydia,  
 127 gonorrheatrichomoniasis, and syphilis (World Health Organization, 2018). The  
 128 World HealtOrganization [WHO] further estimates that there are one million  
 129 new cases of a curablsexually transmitted infection each day. Due to multiple  
 130 factors, certain minoritpopulations are more at risk for contracting new sexually  
 131 transmitted infections, e., men who have sex with men and female sex workers  
 132 (World Health Organization, 2018). Some factors includcertain societal beliefs  
 133 men who have sex with men might engage in nonrelational sex “just trying to  
 134 figure things out...it’s just a hook up phase” (Elder et al., 2015) , ambiguous  
 135 laws concerning the legality of sex work interfering witsafe and available locations  
 136 for such activity, as well as. There may alsbe some difficulties in their willingness

137 in their activities be it forced by another sheer necessity. For countries like  
138 Scotland there have been a reduction in the amount of new cases of STIs like  
139 HIV amongst key populations, however new risks of antibiotic resistant gonorrhea,  
140 *Neisseria gonorrhoeae*, have shown a new prevalence in many countries (Ison &  
141 Alexander, 2011).

### 142 **1.1.2 Who is at risk?**

143 There is then the arduous task of how to research the topic of sexually  
144 transmitted infections and methods of then understanding what is occurring in  
145 the individual. There are neurobiological explanations such as certain brain for-  
146 mations occurring that cause individuals to have difficulty understanding the  
147 consequences of their actions (Moll et al., 2005; Schaich Borg et al., 2008; Tsoi  
148 et al., 2018). There are also more cognitive explanations as well that have shown  
149 promising results. For example in the cognitive sub-area of metacognition there  
150 is an understanding that there are certain cognitive mechanisms that aid in the  
151 individual's ability to regulate their own cognitive understanding of their deci-  
152 sions (C. A. Anderson & Bushman, 2002; Yeung & Summerfield, 2012). This  
153 self-regulation then contributes to their ability to control whether they act on  
154 their baser needs or are able to understand the consequences of what they might  
155 or might not engage in (C. A. Anderson & Bushman, 2002; Crandall et al., 2017).  
156 How individuals had reached the information on the effectiveness of certain be-  
157 havioral changes that reduce the chances of contracting an STI is also in question.  
158 For example, research shows that individuals that have a greater understanding  
159 of the impact and chances of contracting HIV, actually engage in risky sexual  
160 behaviors and therefore increase their chances of contracting the very infection  
161 they have more knowledge (D. B. Kirby et al., 2007). Skills based training showed  
162 more positive results on practicing safer sex practices. How an individual sees  
163 themselves as either a sexual person or person in general is also a factor in how

164 they later may meet an STI (Andersen et al., 1994, 1999; Elder et al., 2015;  
165 Gesink et al., 2016). Aggression, in the cognitive sense, also has an impact as  
166 well demonstrating a dominance over another person that may cause difficulties  
167 in their own ability to make decisions on their sexual health (Malamuth et al.,  
168 1996; Williams et al., 2017).

169       Aggression is one method of exerting control over another individual.  
170 Overall, the exertion of control itself denotes a power disparity between parties  
171 which varies in effects, methods, and domains. [citation]. For example, most re-  
172 search has looked at power-over or one person controlling the behavior of another  
173 person. This area of research connects the cognitive explanation to behavioral  
174 outcomes. Research in power also includes looking at minority populations and  
175 aspects of power over to help explain the increased prevalence of certain STIs  
176 by discussing and researching certain power dynamics [citations]. The institu-  
177 tional support of those power dynamics often reflect power based on age, gender,  
178 political orientation, sexual orientation and gender identity (C. A. Anderson &  
179 Bushman, 2002; Chiappori & Molina, 2019; Volpe et al., 2013; Winter, 1988).  
180 Investigations of the power structure of a family unit has shown to have some  
181 interesting consequences on sexual health depending on the type of parenting  
182 style and parental attachment [Bugental and Shennum (2002); Chiappori and  
183 Molina (2019); Kim and Miller (2020); citations]. A new area of research coming  
184 out of power and cognition is the phenomenon where an individual will harm  
185 themselves in some way to also inflict harm on another. This type of behavior  
186 has been researched extensively in the animal kingdom and is known as spiteful  
187 behavior in that one brings down their own wellbeing to spite the other person.  
188 There would be interesting avenues to research how spiteful thinking may affect  
189 an individual in how they choose one course of action over another. ### Cur-  
190 rent Methodology An interesting aspect of the power dynamics and cognition is  
191 the moral aspect of decision-making. Often, sexually transmitted infections and

risky sexual behavior are used as examples to discuss moral issues. Methods at understanding these situations and other moral issues are through dilemmas or vignettes where individuals are presented with a short scenario and given the opportunity to choose one outcome over another (Ellemers et al., 2019). A trademark example is the trolley car experiment where there is a runaway trolley car that is going towards five people (Greene, 2001). The decision is thus, allow the trolley to careen towards the five people or you could divert the trolley by pushing and sacrificing a large man for the sake of the other five. This type of dilemma poses an interesting method of understanding how and what the decision maker would choose. The researcher can then change the dilemma on its severity and complexity. There could also be a change in situation and the types of individuals that are at risk. Individual choice tasks investigating risky sexual behaviors and STIs could be furthered with investigating the moral decision-making aspect of those issues. Current STI research has focused on methods of ways of curbing why individuals act a certain way when presented with a risky sexual situation (D. B. Kirby et al., 2007). Current methods have shown mixed results. In many countries, how people are taught about risk and sex can vary wildly (Unesco, 2015). For example, some countries may have one standard that is a mix of religious and scientific findings of STIs. While others may not even have a formal sexual education program. Some aspects of sexual activity are not even discussed, for example non-heterosexual sex is not always present in education (Ellis & High, 2004). This becomes problematic in that men who have sex with men tend to be more at risk to contracting an STI than their peers who engage in heterosexual intercourse. There has also been a lot of research in STI rates. Evidence by governments and international health organizations constantly partnering with universities and healthcare providers to collect new incidences of STIs. There might be one way of researching the topic however, it might not look at all the aspects. Some may be more focused on the outcome while ignoring the causes

or hypothesized causes of the outcome. Continued research into the understanding of decision-making is important in that understanding the general helps later understanding of the specific.

## 1.2 Risky Sexual Behaviors and STIs

Sexual activity/ability to reproduce being one of the seven characteristics of life can cause health, financial, and/or social dangers (to all participants) through risk and neglect [citation]. The curability or manageability also plays a factor in how an STI will affect an individual or community. For example, if the treatment is simple and cheap the effect could be minimal. However, if the treatment cost is expensive the drain on multiple resources could be detrimental.

There is a large array of different sexually transmitted infections. Currently, there are eight common types of STIs, chlamydia, gonorrhea, trichomoniasis, genital warts, genital herpes, pubic lice, scabies, and syphilis (Carmona-Gutierrez et al., 2016), chlamydia being the most common. Treatment for these STIs can range from a simple course of antibiotics such as is the case with chlamydia or gonorrhea. Conversely, treatment for syphilis or human immunodeficiency virus [HIV], can be increasingly more involved, cause difficulty in daily life, and have higher costs [citation]. Globally, 37.9 million people are living with HIV [104,000 in the United Kingdom], with 1.7 million being under the age of 15 years old (Ison & Alexander, 2011). The treatment for HIV currently is through antiretroviral medication, which is often a combination of multiple medications to account for the high adaptability of the virus (Costa-Lourenço et al., 2017).

New difficulties appear from the most common treatment strategies. The main strategy for arises given the fluctuating nature of STI treatment and costs. As such, costs for treatments have seen a markable increase with some treatments costing [enter average amount]. An increasing number of antibiotic resistant gonorrhea is occurring globally, with a recent discovery in Japan with a strain that

247 is resistant to ceftriaxone, the most prescribed antibiotic [citations]. Two in-  
248 dividuals in the United Kingdom recently [2019] separately tested positive with  
249 different strains resistant to not just ceftriaxone but also azithromycin [citations].  
250 The confirmed cases may seem small however, 10% of men and half of women do  
251 not show visible symptoms when infected with the bacteria. Medical treatment  
252 alone has not been the only strides made in STIs around the with strides in ac-  
253 ceptances and less persecution for those that have HIV for example. However,  
254 while persecution and stereotyping has gone down in recent years, treatments and  
255 availability to those treatments have become increasingly more costly.

256 Sexually active individuals can become infected with an STI through various  
257 forms. The first and most prominent vector is through risky sexual behaviors,  
258 i.e., multiple sexual partners, unknown sexual history of partners/high-risk indi-  
259 viduals, and unprotected sex [citations]. The most common vector is through en-  
260 gaging in unprotected sex. Condoms are the most common and effective method  
261 of protection, with spermicides increasing their effectiveness [citation]. Once in-  
262 fected, the STIs may have detrimental health effects. For example, genital herpes  
263 may cause infertility in women and certain types of cancers [citations]. Infections  
264 can also be transmitted to infants during childbirth. If left untreated death is  
265 possible for example in the case of syphilis which results in an agonizing death  
266 [citations]. Condoms are still one of the most effective strategies to practice safe  
267 sex along with asking partners about their sexual histories.

268 Even though condoms are the most effective prophylactic, there is still a  
269 chance that an individual may contract an STI. Other risky sexual behaviors can  
270 increase an individual's susceptibility such as having multiple sexual partners.  
271 The age of first sexual intercourse is one of the leading factors that has been  
272 associated with increased sexual risk taking and later transmission of STI (de  
273 Sanjose et al., 2008; Dickson et al., 1998; Tuoyire et al., 2018). Dickson and  
274 colleagues investigated the age at first sexual intercourse and found that women

275 that had their first sexual intercourse before 16 years-old were more likely to  
276 report having contracted an STI. In the United Kingdom, age at first heterosexual  
277 intercourse has decreased over the last 70 years (Mercer et al., 2013). Mercer and  
278 colleagues conducted a longitudinal analysis of age at first sexual intercourse by  
279 separating individuals into birth cohorts. Individuals age 65-74 years reported  
280 their age at first heterosexual intercourse at 18 years. Every ten years that number  
281 has steadily decreased by one with the most recent being 16 years old. Thirty  
282 percent of individuals between the ages of 16-24 report have had heterosexual  
283 intercourse before the age of sixteen.

284       Individuals 18-24 years of age are not just having intercourse at earlier  
285 ages, they are the group with the highest susceptibility of contracting an STI,  
286 amounting for #### of new incidences [citation]. College students/aged in-  
287 dividuals have also increased alcohol consumption which contributes to lowered  
288 inhibitions and increased risky sexual behavior. Because many are developing  
289 sexually including some living away from home for the first time, they are more  
290 likely to engage in sexual experimentation such as multiple sex partners and in  
291 some cases may not use protection such as a condom. Lack of communication has  
292 also been shown to influence the likeliness of contracting an STI. Desiderato and  
293 Crawford investigated risky sexual behaviors in college students and found that  
294 failing to report the number of previous sexual partners and their STI status was  
295 common in both men and women (1995). The social stigma of having contracted  
296 or being suspected of contracting an STI is one of the most common barriers that  
297 inhibits open communication between sexually active individuals (Cunningham  
298 et al., 2009). Stigma concerning a positive STI diagnosis can affect not just the  
299 physical health of an individual but the psychological health as well. In a series  
300 of five experiments, Young and colleagues investigated how the belief of having  
301 an STI has an individual's likelihood of getting tested/treatment (2007). They  
302 discovered two key points on stigma, others perceive those that have an STI as

303 being less moral and others believe that others will see them as being immoral.  
304 This threat of appearing to be immoral may cause the individual to feel as though  
305 the mere perception of having an STI is shameful (Cunningham et al., 2009).

306         The social effects of sexuality in general influence how people see them-  
307 selves. For gay men in particular there is not just the social stigma that some  
308 may have of homosexuality, within the gay community there are some that are  
309 expected to be promiscuous or appear to be promiscuous (Elder et al., 2015). In  
310 a study based on grounded theory, Elder and colleagues asked gay men all aspects  
311 of sexuality to discover and investigate their sexual schemas. A sexual schema  
312 is, “a generalization about the sexual aspects of oneself.” (Elder et al., 2015, pg.  
313 943). The effects of negative sexual self-schema are also seen in bisexual and  
314 straight men and women (Andersen et al., 1994; CYRANOWSKI et al., 1999;  
315 Elder et al., 2012, 2015). Having poor sexual self-schema can result in women  
316 having issues with sexual desire and an inability of reaching orgasm while in men  
317 can result in climaxing too early and erectile dysfunction (CYRANOWSKI et al.,  
318 1999; Kilimnik et al., 2018). Long lasting impairments can often lead to more  
319 psychological issues.

320         Individuals that have contracted an STI are also more likely to be ostra-  
321 cized from their immediate community. For example, gay men who contracted  
322 HIV in the beginning of the AIDs crisis were often ostracized by society even  
323 when they were seeking treatment in the hospital. Nurses would often, for lack  
324 of knowledge of transmission of the virus, would often drop medication in front  
325 of the patient’s door and would rarely physically interact with them [citations].  
326 This ostracization further compounds the psychological and physical trauma that  
327 individuals with HIV already have. As more knowledge of how HIV is transmitted  
328 individuals can get more efficient and better treatment. However, ostracization  
329 often occurs [citations].



### 330 1.3 Moral Judgment and Decision-Making

331 Sam has frequent and unprotected sex with multiple partners, resulting  
332 in a sexually transmitted infection that causes visible sores on the mouth and  
333 hands. On the way to the chemist one day, Sam has an acute heart attack. By-  
334 standers rush to help, but see the sores on Sam's mouth and hands. How would  
335 the bystanders react? Would they resuscitate Sam? Would it be morally wrong  
336 for them not to risk contracting an unknown disease from Sam, even if it may  
337 cost Sam's life? Similar sorts of dilemmas are often used to study moral decision  
338 making of various sorts (Clifford et al., 2015). the thought experiment of the  
339 trolley dilemma. Research by Haidt and colleagues, compared psychologically  
340 normal adults to psychopathic traits and performance on the Moral Foundations  
341 Questionnaire [MFQ; Graham et al. (2011)]. Findings included higher psycho-  
342 pathic tendencies were associated with lower likelihood of following justice-based  
343 norms, a weak relationship with disgust-based and in-group norms, and finally  
344 an increased willingness to violate any type of norms for money (Glenn et al.,  
345 2009). The key factor in the Moral Foundations Questionnaire are these moral  
346 foundations of which there are five moral domains: harm versus care, fairness  
347 versus cheating, loyalty versus betrayal, authority versus subversion, and purity  
348 versus degradation (Clifford et al., 2015). Each of these moral domains have a  
349 good and bad component compared to the action type.

350 The MFQ has been extensively used in research on moral decision-making,  
351 with common subjects being on political thought [citation]. In the early studies of  
352 moral foundations theory, Haidt investigated the moral foundational differences  
353 between individuals that lean either politically liberal or conservative. Of the five  
354 moral domains, differences appeared in the likelihood of how either conservatism  
355 or liberalism affects the likelihood of individuals to endorse each domain. For  
356 example, liberalism suggests protecting the individual from harm by the society,  
357 especially if they are a member of a minority group. Conversely, conservatism,

358 namely religious conservatism suggests a propensity for sanctity and purity, along  
359 with respecting authority and following the societal moral codes [citations]. Emo-  
360 tional valence is often the best predictors of moral judgments [citation]. The more  
361 emotional valence the faster the response time the decision-maker decides and the  
362 more staunchly held they are to their decision. Interestingly, participants would  
363 be unable to express or support the decisions that they made. Often, partici-  
364 pants would downplay their decisions by laughing or stuttering (Haidt, 2001).  
365 Additionally, as their emotional valence of the decision is higher, people are con-  
366 sistently holding on to their judgments regardless if they were able to support  
367 their judgements when asked or not. It then makes sense why some individuals  
368 are more politically intransigent given their deeply held moral codes.

369 Politically held beliefs are often emotionally laden (G. Marcus, 2000). Ac-  
370 cordingly, moral foundations theory postulates that there is a good versus bad  
371 in the moral domains. When participants are asked to respond to statements  
372 that are only offensive but were not harming anyone, participants had issues sup-  
373 porting whether the statement was good or bad. For example, when participants  
374 were given a story of cleaning the toilet with the national flag, participants would  
375 respond that it is bad and said that they just knew that it was wrong [citation].  
376 Often when individuals violate the moral rules of “cleaning the toilet with the  
377 national flag” violators will be judged as immoral and sometimes punished for  
378 their actions [citations]. Intuitively the participants responded that the actions  
379 were morally were obviously morally wrong. Requiring little to no explanation  
380 as to whAn interesting facet of moral judgment is how individuals react to moral  
381 decisions when they are reminded of their own mortality (Greenberg et al., 1990;  
382 Rosenblatt et al., 1989). Reminding individuals of their mortality causes them,  
383 according to terror management theory, to want to push away from the thought  
384 of their eventual death. To do this people often cling to their deeply held cultural  
385 beliefs to remove their thoughts from reality (Greenberg et al., 1990). In the

386 first of a series of experiments Rosenblatt and colleagues found that participants  
387 that were reminded of their mortality judged prostitutes more harshly, more so  
388 if the participants already had negative opinions on prostitution. This was also  
389 seen conversely with heroes that follow the cultural norms. Those participants  
390 advocated for a larger reward for those individuals (Rosenblatt et al., 1989). The  
391 already held opinions were further investigated to where Christians were asked  
392 to report their impressions of Christian and Jewish individuals after mortality  
393 became salient. Those that were a member of the in-group, Christian, were more  
394 likely to be regarded as more positive than their out-group counterparts, Jewish  
395 individuals (Greenberg et al., 1990). In-group bias is an oft studied concept in  
396 psychological research. Mortality salience and moral violations tend to increase  
397 the strength of the in-group bias and then moral judgement and condemnation  
398 [citation].

399         When a person does a negative action, the reason for the action is often  
400 judged and assumed. An action is commonly seen as being intentional when  
401 the individual actively does the action directly. However, intentionality becomes  
402 problematic participants have already had negative evaluations of the individ-  
403 ual. In an experiment where participants were asked to judge the culpability of  
404 an airline passenger that was forced by high-jackers to kill another passenger,  
405 the high-jackers were the external force forcing the passenger to commit murder.  
406 However, when the participants were told that the passenger already wanted to  
407 kill that passenger before the hijacking was occurring, they were judged as more  
408 culpable. With or without the internal motivation of wanting to already kill the  
409 other passenger, the resulting death still occurs. When participants were given  
410 a, less vivid, story of a manager that was only mistreated a black employee and  
411 another story of a non-bigoted manager that was mistreating all of their employ-  
412 ees, participants judged the bigoted manager more negatively. Even though there  
413 were differences in those affected between the managers, participants already held

414 a negative opinion for those that hold bigoted views, and thus judged the bigoted  
415 manager more severely [citation].

416 Research in attributional blame continued with an experiment investigat-  
417 ing passengers on a sinking boat (Uhlmann et al., 2013). Participants were given  
418 a story where there were several individuals on a sinking lifeboat. There were too  
419 many people in the boat and the only course of action given was that some of the  
420 passengers had to be thrown overboard. In the utilitarian perspective, used for  
421 this example, the morally correct judgment was a few must be sacrificed for the  
422 safety of the larger group [citation]. However, the participants often judged the  
423 surviving passengers as acting selfishly. Thus, they were seeing the passengers as  
424 immoral.

425 When individuals commit a moral violation, as would be the case for the  
426 surviving passengers, it is not only important to investigate how others would  
427 judge and react but also how the individual reacts to their own action (Tangney  
428 et al., 2006). Emotional reactions occur when someone does a behavioral action,  
429 or they expect a behavioral action to follow. An interesting aspect of emotional  
430 reactions are emotional reactions tied to moral judgment. When an individual  
431 violates a moral norm, they often feel a personal feeling of shame or guilt which  
432 are two of the most commonly studied of these self-evaluative emotions (Tangney  
433 et al., 2006). There is an inherent difference between these two emotions, shame is  
434 inferred as being negative feelings of oneself that has a public display, while guilt  
435 is similar sans the public display (Tangney et al., 1996). Individuals who violate  
436 the community's customs on purity often feel a sense of shame. While guilt is  
437 commonly felt with a violation of community [citations]. People with STIs are  
438 often left feeling shame from their suspected purity violation and thus are often  
439 stigmatized for their behavior and punished in some form by the community.  
440 This can lead, as discussed in the previous section, to increasing their sense of  
441 isolation and negative self-worth. How the moral violators react to their shame

442 or guilt is dependent on whether they experience the former or the latter. There  
443 are often attempts to amend the situation when individuals have violated moral  
444 norms. Depending on the self-evaluative emotion that is being felt, people will  
445 make amends to try to change the situation or they may hide it (Tangney et al.,  
446 1996). Guilt is the former and shame is the latter. In most cases individuals that  
447 are feeling shame will attempt to ignore their moral violation where they will deny  
448 or evade the situation that is causing them shame. Conversely, people with guilt  
449 are often motivated by those negative feelings to fix the situation that caused  
450 them to feel the guilt. Guilt is often feeling negativity towards a specific action  
451 while feeling ashamed or shame is usually a reflection of the entire self [citations].  
452 Thus, in relation to how to repair the guilt inducing act, it would appear to be  
453 more manageable if the inducing situation was a singular event rather than a  
454 feeling of the entire self. Participants that were prompted to feel shame were less  
455 likely to express empathy for someone with a disability (Marschall, 1998 as cited  
456 in Tangney et al., 2006). When people feel a sense of shame, they self-evaluate  
457 and reflect on themselves. This hinders the empathy process that would require  
458 them to focus their attention on the emotions of another person.

459 Barnett and Mann investigated sexual offenders to understand how feelings  
460 of empathy are blocked for their victim at time of the offense (2013). In empathy  
461 research, emotions cannot only just be inferred by the situation but be “felt” to be  
462 classified as expressed empathy. Earlier research looking at empathy by sexual  
463 offenders has not shown them as being unempathetic. However, Barnett and  
464 Mann contend that sexual offenders may have a disruption in seeing distress in  
465 their victim. The offender may then believe and assert that their victim deserves  
466 the distress that they are experiencing and have a cascading effect where they  
467 may be powerful and enjoy the distress of the victim (Barnett & Mann, 2013).

## 468 1.4 Power

469 A common denominator in research on the dark personality and moral  
470 judgment is the influence of power. To define power, one would have to first  
471 define the actor and the recipient of the power. Therefore, there is either power-  
472 over, power-to, and power-with. Each aspect has their own different consequences  
473 [citation]. Power-over is when there is one individual, the one with power, which  
474 wields control over a subordinate individual [citation]. Power-to is when an in-  
475 dividual of privilege uses their status and power to control and enact a certain  
476 consequence [citation]. Finally, power-with is an interesting concept where a per-  
477 son of power uses their own power to lift or elevate someone without power to a  
478 power position [citation]. This is often seen in community projects where some-  
479 one in power goes into a troubled community and facilitates the situation so that  
480 those that have less power can have their voices be heard. Power also has var-  
481 ious sources each with their own complex consequences: institutional, cultural,  
482 gender, age, ethnicity, orientation, and gender-identity [citations]. Some sources  
483 of power compound on one another to increase the level of power over other sin-  
484 gular sources of power. For example, in many areas of the world a straight white  
485 cisgender man would hold the most power relative to other individuals.

486 Power influences relationships be it romantic or familial, work, academics,  
487 including each of their derivatives. The three variations of power have various  
488 influences on each of the areas of life. Power is neither good nor bad, it is how  
489 the power is used that makes it either good or bad [citation]. Power and power  
490 structures are often in the media. Often when there is a military coup in a far-  
491 off country, individuals discuss power-over. When a humanitarian goes into an  
492 impoverished community to help their voices heard, power-with is discussed. As  
493 with the previous example, when a legislator uses their influence to pass a law,  
494 that legislator uses power-to.

495 Early discussions of power descended from Greek and Roman political

496 philosophy (Aristotle, 1984). Greek Philosopher, Plato's brothers Glaucon and  
497 Adeimantus discuss the viability or requirement of citizens being just and lawful if  
498 they are able to escape conviction because of some social power or fortune (Aris-  
499 totle, 1984). Aristotle continued the discussion by posing the questions, "There is  
500 also doubt as to what is to be the supreme power in the state: Is it the multitude?  
501 Or the wealthy? Or the good?..." (Aristotle, 1984). Power discussions such as  
502 that by Aristotle point to what is the source of someone's power. Does the power  
503 come from the majority? Does it come from money? Does it come from those  
504 that are just? Each source of power has different effects on those that are gov-  
505 erned by those with that power. Polybius of Greece discussed how a constitution  
506 should be created and power should be delineated. Polybius power should be  
507 split between multiple groups, each with a different form of power and distinct  
508 genre to wield that power [citation]. Power continued to be discussed well beyond  
509 the Greek philosophers and continued by political researchers and philosophers.  
510 Discussions of power soon developed into research on how it influences at the  
511 community level.

512 Sociologists, following many of the philosophical thought experiments pre-  
513 vious and current to the time, began to research power. Sociologists soon devel-  
514 oped the area of research in social power, where political power was a subset.  
515 According to Bierstadt, power is always successful, whenever it fails then it is no  
516 longer power [1950]. Sociologists asserted that power be conceived of as a force,  
517 something that is applied to control a situation. Power can also be conceived of  
518 as more passive authority. There are three sources of power: number of people,  
519 social organization, and resources. From that individuals that are the class or  
520 group or have the most resources that are in need are those that will have the  
521 most power. Resources need not be physical objects they can also be more psy-  
522 chological such as skills or knowledge. From history there are many examples  
523 where power becomes toxic and the leader becomes the oppressor. Be it Mao

524 Ze Dong, Stalin, Lenin, or Hitler. The question then becomes what causes the  
525 powerful to become oppressors? In some cases, those that are in power are trying  
526 to do good for the community, restrictive from the example.

527         Recently, issues and abuses of power have become much of the forefront  
528 of news due to the explosion caused by the me-too movement [citation]. The me-  
529 too movement was first coined by activist and sexual harassment survivor Tarana  
530 Burke. A decade after she disclosed her sexual assault, the me-too movement and  
531 the abuse of power dominated the new cycle with accusations against film pro-  
532 ducer Harvey Weinstein [citation]. Weinstein was known for doing philanthropic  
533 initiatives during his career by using his influence and money to aid the certain  
534 initiatives that he had chosen. However, soon news of his sexual assault accu-  
535 sations and threats became news. Soon multiple women came forward accusing  
536 Weinstein of assaulting them as well and using his power over them to intimidate  
537 and silence them [citation]. This exemplifies how resources and position aid in  
538 individuals become powerful. Weinstein had the resources and the authority to  
539 abuse his power with many of his peers knowing what he was doing [citation].

540         In psychology, it was originally conceived that power corrupted individ-  
541 uals exemplified by the Stanford prison experiment where “regular” individuals  
542 were instructed to play the prison guards of a simulated prison. Similar indi-  
543 viduals were instructed to portray the prisoners [citation]. Zimbardo, the lead  
544 researcher for the experiment, soon noted that the individuals that portrayed the  
545 prison guards became aggressive with the prisoners. They verbally and physically  
546 assault them. The experiment was halted to stop any more damage from occur-  
547 ring. News spread of the results of the experiment and power was seen as causing  
548 or influencing the “prison guards” to become aggressive and abuse towards the  
549 “prisoners.” However, the nature of the participants became into question [cita-  
550 tion]. Later researchers noted that there could have been a self-selection bias of  
551 the participants. The experiment was advertised such that the prison experiment



552 was known to the participant. This would then cause individuals to self-select  
553 into the group which could possibly skew the results given that the participants  
554 may have had authoritarian tendencies and the experiment and added power  
555 may have given the opportunity for the participants to express their authoritar-  
556 ian tendencies already present [citation]. Similar explanations have occurred in  
557 politics.

558         Throughout political history individuals that have reached powerful posi-  
559 tions on multiple occasions have given some powerful people the outlet to express  
560 their prejudiced and problematic beliefs [citation]. Fear of communist infiltration  
561 in the United States caused many fears and blacklisting was a frequent practice.  
562 Joseph McCarthy, a Wisconsin senator, would soon use his power as a legisla-  
563 tor/senator [citation]. McCarthy would call individuals to the front of the House  
564 Un-American Activities Committee because they were suspected of being spies  
565 for the Soviet Union. McCarthy and the committee used strong arm tactics and  
566 would often threaten individuals brought in front of the committee. Many in-  
567 dividuals brought forward often had their lives irrevocably changed [citation].  
568 Soon Senator Margaret Chase Smith and six others condemned McCarthy for his  
569 actions and tactics. McCarthy was soon censured, and the House Un-American  
570 Activities Committee was disbanded. The political issue of power being used  
571 as an outlet for prejudiced and authoritarianism became apparent recently after  
572 the 2016 United States Presidential Election [citation]. Donald Trump's political  
573 exploits would soon highlight his past and present use of power and his uneth-  
574 ical dealings. Often Donald Trump would use his power for personal gain and  
575 to express his prejudicial and racist beliefs. Examples range from in the 1990's  
576 Donald Trump advocated for the Central Park Five, five African-American men  
577 accused of raping and murdering a young White woman in Central Park, to be  
578 put to death [citation]. However, DNA evidence exonerated on the men of the  
579 crime [citation]. Recently, Donald Trump on the campaign trail accused Mexico

580 of sending individuals across the border that were rapists and drug dealers. How-  
581 ever, there was no physical proof of the case and became a common trope used by  
582 Donald Trump supporters. Because of the misuse of power and authority, there  
583 have been increased hate crimes towards Mexican Americans and African Amer-  
584 icans [citation]. The Southern Poverty Law Center, an organization that records  
585 the number of hate groups currently active in the United States has documented  
586 a clear increase in the number of active hate groups after the 2016 election [cita-  
587 tion]. The supporters feel a sense of validation for their own beliefs and opinions  
588 which they feel allows them some power in and of itself. This then poses an  
589 interesting question in power research in psychology. What are the correlates of  
590 the power complex? What are the consequences of power? How does a power  
591 imbalance affect relationships? The list of questions is vast and varied.

592         Power imbalances in relationships can have negative effects spanning the  
593 entirety of an individual's life, be it emotionally, physically, psychologically, and  
594 socially [citation]. Dr. Helene Papanek, director of the Alfred Adler institute, a  
595 sub-clinic of the Alfred Adler Mental Hygiene Clinic, discussed at a meeting of  
596 the Association of Humanistic Psychology, multiple cases of controlling and power  
597 disturbances in personal relationships. A relational example was presented where  
598 a father, Mr. A had complete control over his wife and daughter. Controlling  
599 when they should be home and where they should go. Mr. A even controlled  
600 the frequency and positions of sex (Papanek, 1972). Power-over someone can  
601 also manifest feelings of low self-worth and destructive behaviors. For example,  
602 Ms. C was a young mother of a child born out of wedlock. She was abandoned  
603 by her parents and the father of her child. She was constantly controlled by  
604 her mother and their disdain for her child out of wedlock. Soon she developed  
605 panic attacks but also a sense of superiority over others as a defense mechanism.  
606 Dr. Papanek noted that Ms. C developed and lived a life of spiteful behaviors one  
607 after the other.

608           The behaviors of Ms. C and Mr. A are not the only examples of individu-  
609 als having power over another person or being subjected to the power over them.  
610 Power-over has occurred throughout human history and is ingrained in all cultures  
611 [citation]. Institutional power-over is quite common cross-culturally. Contracep-  
612 tion and control over one's own reproductive system is a prescient debate globally  
613 [citation]. In 1960 and 1963 Enovid was approved for use in the United States and  
614 United Kingdom respectively [citation]. Doses for contraception early on were of-  
615 ten high and news of multiple deaths was reported widely. Cases were brought  
616 forward to control the use of contraception. The Roman Catholic Church's stance  
617 on hormonal contraception shifted from permission to outlawing anything that  
618 would be believed as stopping the ability to propagate [citation]. Interestingly  
619 in 1989 researchers working for Pfizer in the United Kingdom were researching a  
620 new drug that would aid in treating heart conditions [citations]. The researchers  
621 soon discovered sildenafil also could treat erectile dysfunction. Ten years later,  
622 sildenafil, brand name Viagra, would be patented and approved for use for the  
623 primary treatment for erectile dysfunction [citation]. The same individuals that  
624 were trying to reduce the use of female contraception were not trying to do the  
625 same for Viagra. The Japanese government and officials had similar attempts  
626 to quell the use of female contraception while not doing the same for erectile  
627 dysfunction treatments [citation].

628   The Council on Foreign Relations [CFR] a non-profit that specializes in the United  
629 States and international affairs, conducts an international index on women's work-  
630 place equality by rating each country on factors: accessing institutions, getting a  
631 job, going to court, protecting women from violence etc. [citation]. Scores range  
632 from 0 to 100 where 100 is near total equality in all areas. Of 189 countries on the  
633 list only 9 scores over 90% in the ranking. One hundred and thirty-eight score be-  
634 low 75 with Yemen having the lowest score of 24.5. Including those that intersect  
635 with other minorities have even less power like women of color and trans individ-

636 uals [citation]. Women having less power than their male counterparts can have  
637 multiple negative outcomes such as continued and sustained sexual aggression,  
638 low self-esteem, financial insecurity, lack of freedom of movement, lack of freedom  
639 of thought, and in some extreme cases even death [citations]. Cultural relativism  
640 creates a difficulty in cultures that have opposing views on the rights and how to  
641 navigate that can in and of itself reflect institutional power imbalances.

642         Power imbalances can create a dissociative state where those with less  
643 power are seen as more of an object than a person (Gwinn et al., 2013; Haslam &  
644 Loughnan, 2014; Lammers & Stapel, 2011; Smith, 2016). While others with more  
645 power may see those with less as be less human, some individuals attribute the  
646 dehumanization to themselves as well and self-dehumanize (Bastian et al., 2013;  
647 Bastian et al., 2012; Bastian & Haslam, 2010; Kouchaki et al., 2018). Effects of  
648 prolonged dehumanization by those with more power often, unchecked and under  
649 constant pressure, can lead some individuals to believe what the powerholders  
650 say is true. The question remains, why do people in power begin to dehumanize  
651 those with less power? Commonly when an individual harms another usually  
652 there is some perspective taking by the harmer. However, to dehumanize the  
653 other person it lessens the sense of empathy that one would normally feel thus  
654 allowing for more damage and harm to be committed [citations]. “With great  
655 power comes great responsibility” often quoted by Uncle Ben in the Spider-Man  
656 comic books, yet has its possible historical foundations in the French National  
657 Convention in 1793, leads credence to the wane and flow of the effects of power  
658 (Nationale (Paris), 1793). Those in power make decisions for those for which they  
659 are leaders. As is the case with every decision there is a reaction to the decision.  
660 Sometimes those effects are negative and those with less power may be harmed in  
661 the process. Dehumanization of those in less power acts as a defense mechanism  
662 to continue making life changing decisions.

663         Often dehumanization is left to more extreme occasions such as war,

664 infrahumanization, where ascriptions of nonhuman qualities are more subtle  
665 and not as extreme (Haslam & Loughnan, 2014). Research in dehumaniza-  
666 tion/infrhumanization by Gwinn and colleagues used game theory and univer-  
667 sity students to simulate power differentials (2013). In their research, they found  
668 that once individuals began to gain power, they would ascribe fewer humanlike  
669 personality traits than those with less power ascribing traits to the powerful.  
670 Interestingly, there is a reciprocal relationship between self-dehumanization and  
671 immoral behavior (Kouchaki et al., 2018). When individuals would commit an  
672 immoral behavior, they would afterwards often feel less human, which in turn has  
673 them act more immoral.

## 674 1.5 Cognition

675 When deciding, the decisions are not subject to a vacuum. Every decision  
676 that is made is contingent on the prior understanding and knowledge of the  
677 situation and the possible outcomes of those decisions. The woman choosing one  
678 tie over another or the little boy choosing one doll to play with is contingent on  
679 the knowledge that they both separately have gained in their lives so far. It could  
680 be said that the time at which an infant is first learning about the world is when  
681 individual decisions are made by instinct without gained knowledge. When the  
682 infant ages and acquires more memories from the environment, it will begin to  
683 use those memories in making future decisions.

684 The first step at acquiring new knowledge is interacting with the environ-  
685 ment. One explanation that has been garnering more cognitive and biological  
686 attention is from Dr. Nelson Cowan’s integrated working memory model (Cowan,  
687 1999). In the integrated working memory model there are four key areas in at-  
688 taining new information: [1] a brief sensory store, [2] a long term store, [3] the  
689 focus of attention, [4] and the central executive. Each key area has a separate  
690 function[s] that allows for new information to be “judged” against the existing

691 information. The information that is then held temporarily in a sensory store  
692 to where it is then sent to the long term store to be “directed” by the central  
693 executive which is a metacognitive process that controls and directs where atten-  
694 tion should be placed on the incoming information. There is then a controlled  
695 more conscious action or an automatic action based on the type of incoming in-  
696 formation. Information that is automatic usually is considered habituated to the  
697 memory system and is therefore not a novel stimulus. More focus is given to  
698 information/stimuli that is more novel. In the integrated working memory model  
699 information that is incoming in the brain is often “filtered” through a lens that  
700 is understandable to the individual, novel stimuli. From here the information is  
701 then encoded and stored in long-term memory for reactivation by new stimuli.

702         The integrated working memory model is similar in thought to how indi-  
703 viduals make decisions based on the laws and customs of a society. Johnathan  
704 is a normal member of his community. They participate in a common game in  
705 the park with some friends. Johnathan says an inappropriate joke to one of their  
706 friends. The others overhear and judge, automatically, the content of the joke to  
707 the governed norms of the community. Because this joke is outside the common  
708 norms of the community, the others see Johnathan as violating their moral code.  
709 Johnathan’s friends would then automatically analyze the joke against existing  
710 information and attend to the key features. Like how the central executive guides  
711 and directs attention to the new novel stimuli, the inappropriate joke. Interesting  
712 research has been done with morality and metacognition.

713         Common to research in metacognition and moral reasoning is theory of  
714 mind. A theory of mind is the ability for an individual to attribute or recognize  
715 the inner workings of the mind and differentiate those from the self and others  
716 [citation]. Research in theory of mind has contributed to our understanding of  
717 autism, schizophrenia, and traumatic brain injury (Byom & Mutlu, 2013). An  
718 individual with deficits of theory of mind would for example be unable to attribute

719 signs of happiness on other people, such as a smile or a frown [citation]. In the  
720 case of Johnathan, if they had a theory of mind deficits, they would be unable or  
721 have difficulty in noticing the dissatisfaction of their joke. Research using theory  
722 of mind to investigate social situations such as the example with Jonathan helps  
723 psychologists get a better understanding of how moral judgement works and is  
724 affected by deficits in the cognitive system.

725         As discussed thus far, cognitively, each component contributes and affects  
726 the individual in a multitude of ways. As previously discussed in the section  
727 on risky sexual behaviors, how the individual sees themselves and how they be-  
728 lieve others see them is exceptionally important to their overall cognitive health.  
729 These sexual schemas that each of us create about ourselves is influenced by daily  
730 interactions and prior history, whether sexual. Outside of how the sexual schema  
731 individuals create about themselves affects their later sexual health, it can change  
732 how they see and interact with the world around them.

733         The prior knowledge that individuals have can have a negative effect on  
734 their ability to gain and hold new information. Those with lower prior knowledge  
735 of a given technology often have difficulty in reconstructing the information of a  
736 new product compared to those that have less prior knowledge [Wood & Lynch,  
737 2002]. When people are presented with new information, a new technology, en-  
738 coding of the new information takes place. As that occurs, prior information of  
739 the technology is retrieved, and an inference is made on subsequent information  
740 by comparing the new and old information. This affects the ability to encode the  
741 new information “correctly” and can disrupt later retrieval of the former. Similar  
742 effects are seen when investigating motivational forces. Individuals with prior  
743 knowledge may also have an overconfidence of the information that they already  
744 have and are not as motivated to attend to the information they are learning.

745         Extending the research on prior knowledge and new technology, prior  
746 knowledge and complacency has also been seen with contracting an STI, a virus,

747 or chances of getting pregnant [citations]. The decisional factors that occur cog-  
748 nitively to choose safe sex practices is complex and subject to frequent change.  
749 Many people that are confronted with decisions, such as the mundane choice of  
750 what shoes to wear, base their decisions from using a variety of cognitive methods.  
751 Often, the choice to wear a condom or other safe sex practices is through a risk  
752 heuristic of contracting or transmitting a sexually transmitted infection. With  
753 decisions based on issues of purity, such as sex, one heuristic that is commonly  
754 employed is the affect heuristic. The affect heuristic in judgements of risk is where  
755 the thought or priming of a specific word triggers a quick emotional response to  
756 that stimuli word (Finucane et al., 2000). When presented with words that are  
757 physically harmful such as cigarettes or pesticides, participants rated the words  
758 as too risky and reported negative feelings concerning those stimulus words. Af-  
759 fective considerations of high-risk situations are often put into perspective with  
760 individuals in risky situations.

761         An artifact of how issues such as HIV, Human Immunodeficiency Virus,  
762 discussed in the media and the community that it affects creates a cognitive  
763 problem with individuals judging the likelihood of catching the virus, especially  
764 women. In the media it is often discussed how men who have sex with men  
765 are the main individuals catching and spreading HIV. While HIV still affects the  
766 LGBTQ+ community, the discussion around susceptibility affects other individu-  
767 als outside of the LGBTQ+ community negatively as well. Women, for example,  
768 have a genetically higher susceptibility to the virus [citation]. That being so,  
769 often due to unintended ignorance to their chances are one of the leading groups  
770 contracting new cases of HIV [citation]. Downlow culture as well increases the  
771 chances of contracting the virus. Amongst some men that do not wish to ac-  
772 knowledge their own homosexuality will choose to forgo the condom, implies a  
773 premeditation, and do not necessarily believe they will contract the virus [cita-  
774 tion]. Both examples are contributed by the representation of HIV in the media



775 and the current zeitgeist.

776 Common in all decisions is the difficulty and uncomfortability between  
777 different decisions and opposing situations, is cognitive dissonance (Festinger,  
778 1957). An interesting cognitive dissonant series of thoughts that some males  
779 have is when choosing to wear a condom. Often, there will be the cognition of not  
780 wanting to contract an STI, but also believing that condoms are uncomfortable  
781 (MacPhail & Campbell, 2001). In addition to believing they are uncomfortable  
782 there is an interesting cultural belief amongst some young men that wearing a  
783 condom makes them less of a man (Pleck et al., 1993; Vincent et al., 2016). To  
784 some the main decisional factor in whether to wear a condom is not contracting an  
785 STI or getting pregnant [citation]. While, as noted with perceptions on condoms,  
786 often comfort and how others will see them is the main factor. Sexually active  
787 or those thinking to become sexually active often get their opinions on sexual  
788 activity and safety practices from their peers. Often, the opinions of peers are  
789 more influential than those of the parent[s]. Interestingly, some men believe that  
790 due to the cultural cognition around contraception, discussions and decisions of  
791 contraception is a female decision (Castro-Vázquez, 2000).

### 792 **1.5.1 Aggression and Cognition**

793 Connected to spitefulness, moral judgment, and cognition is human ag-  
794 gression. Traditionally, aggression is differentiated between the outcome or moti-  
795 vation of the incident. Aggression as it is operationally defined is behavior that is  
796 committed by the actor to another with the intent to harm the other (C. A. An-  
797 derson & Bushman, 2002). This is then further differentiated to violence where  
798 violence is the intent to cause severe harm such as death. From aggression re-  
799 search and moral judgment, cognitive neoassociation theory [CNT] was beginning  
800 to become tantamount in research on aggressive behavior.

801 In CNT, similar to the study of disgust association where some research

suggests that inducing the disgust response to smell causes individuals to become more conservative against breaking moral norms (Eskine et al., 2011; Horberg et al., 2009; Laakasuo et al., 2017; Tybur et al., 2009). Important to the present discussion on sexual judgment, research by Laakasuo and colleagues suggest that disgust is only predictive of sexual disgust (2017). From CNT, Anderson and Bushman developed the General Aggression Model [GAM] is a theoretical outline that combines multiple smaller domain specific theories on aggression like CNT (2002). The GAM has processes: inputs, routes, and outcomes of a social situation. The inputs separate into a person and situation centered inputs. The individual then has an internal examination of the person or situation, cognitions like affective processes, availability heuristics, theory of mind evaluations, scripts and schemata [Barnett and Mann (2013); Kahneman and Tversky (1972); scripts and schemata citation]. Appraisal and a decision process are the last step in the GAM, where the individual evaluates the situation based on the inputs and routes. Anderson and Bushman contend that there are two types of outcomes, thoughtful and impulsive actions. Like the affective heuristic, the impulsive action is often fast and does not require as much deliberation. While the thoughtful action requires more time and evaluation of all the possible outcomes.

Scripts and schemata are key components of the GAM. Schema, more broadly than sexual schema, are cognitive compositions or structures that represent objects or ideas interconnected by their features (DiMaggio, 1997). Multiple representations of schema and stereotypical event sequences are labelled as scripts (Abelson, 1981). A classic example of a cognitive script is events surrounding reading the menu at a restaurant (Abelson, 1981). An individual is at a restaurant and needs to order from the menu. However, they lost their reading glasses. As Abelson contends, the reader must infer what is needed in reading a menu, what occurs at a restaurant, and so on. The automatic process of schematic activation begins with certain key features of an object or event being noticed

830 by the individual. For example, recognizing a tree one of the first features that  
831 are noticed that distinguishes a tree are the leaves. From the leaves, the bark is  
832 activated, and so on making up the concept of a tree.

833 Often aggression and discrimination can be understood through the  
834 schematic model. Media and social representations of individuals, especially men  
835 of color, have often made assumptions and portrayed them as violent and crim-  
836 inals. Currently a majority of US adults in a recent Pew Research Center poll  
837 report that race relations are currently worse, Black Americans and people of  
838 color in general report more cases of discrimination, and a majority say Black  
839 Americans in particular are treated unfairly by the police (Pew Research Center,  
840 2019). Aggression or discrimination is often the result of associating one group  
841 with negative connotations. For example, in the case of those that believe Black  
842 Americans are criminals they have through cognitive associations have related  
843 the schematic concept of criminal with the features/schema of what they believe  
844 is a Black American. The discrimination and aggression then occur through the  
845 GAM processes with negative actions being the outcome.

846 Pertinent after the advent of the me-too movement, see section 3, issues of  
847 how these power over views of women, especially women of color and trans women  
848 of color, become learned and develop in sexual aggression. Sexual aggression in  
849 and of itself is a subgroup of aggression where the intent to harm is sexual in  
850 nature (C. A. Anderson & Bushman, 2002; Malamuth et al., 1995). Many of  
851 the targets of sexual aggression are women of color and trans women of color  
852 [citations]. In the reported cases men are often the perpetrators of the crimes  
853 (C. A. Anderson & Bushman, 2002). The aggression itself appears to be domain  
854 specific to one gender, women. Often, acts of sexual aggression are verbal in  
855 nature, such as asking repeatedly for sex or threatening to break up with them  
856 (Testa et al., 2015). When individuals gain power they may aggress more over  
857 those that have less power, which may pay head to the continued sexual aggression

858 and sexual violence against women of color and trans women of color for whom  
859 have historically low levels of power [citations].

860       Recent research by Garnett and Mann investigate the cognitive and em-  
861 pathetic processes of those that commit a sexual aggression or sexual violence,  
862 labelled as sexual offending (2013). Common to research on sexual offenses, re-  
863 search contends that those that do offend do so with a lack of empathy towards  
864 their victims (Marshall et al., 1993). As noted in the previous section on moral  
865 judgment, see section 3, empathetic processing by these offenders are more com-  
866 plex than the simple inability to “feel” or identify the emotions of others. There  
867 is a recurring theme amongst offenders of women being deceitful and sexually en-  
868 titled (Barnett & Mann, 2013; Gannon, 2009). The offenders often feel slighted  
869 when a woman denies their sexual advances which then tends to lead to some  
870 sexual aggression (Gannon, 2009; Williams et al., 2017).

871       The rejection of the sexual advances of the man often damage their sense  
872 of masculinity (Malamuth et al., 1996). Relating back to beliefs on condom  
873 use amongst men, even the request of wearing condom could be interpreted as  
874 damaging their sense of masculinity (Castro-Vázquez, 2000). If the woman, in  
875 a heterosexual relationship, brings the condom they are damaging the males  
876 masculinity but if the male brings the condom he could also be considered a  
877 thoughtful individual. While the woman would be seen as easy. This could  
878 then lead to bullying behavior and ostracization from the moral judgment of the  
879 community on the woman’s purity, see section moral judgment.

## 880 **1.6 Experiment One**

## 881 **1.7 Method**

### 882 **1.7.1 Participants**

883       Participants were a convenience sample of 92 (Mage = 26.14, SD = 8.69)  
884 individuals from Prolific Academic crowdsourcing platform (“www.prolific.co”).

885 Requirements for participation were: (1) be 18 years of age or older and (2) and  
886 as part of Prolific Academics policy, have a prolific rating of 90 or above. Par-  
887 ticipants received £4 or £8 an hour as compensation for completing the survey.  
888 Table 1 shows the demographic information for experiment one.

### 889 **1.7.2 Demographic Questionnaire**

890 Prior to the psychometric scales, participants are asked to share their  
891 demographic characteristics (e.g., age, gender, ethnicity, ethnic origin, and edu-  
892 cational attainment).

### 893 **1.7.3 Dominance, Prestige, and Leadership Orientation**

894 The 18-item Dominance, Prestige, and Leadership scale [DoPL; Suessen-  
895 bach et al. (2019)], is used to measure dominance, prestige, and leadership orien-  
896 tation. Each question corresponds to one of the three domains. Each domain is  
897 scored across six unique items related to those domains (e.g., “I relish opportuni-  
898 ties in which I can lead others” for leadership) rated on a scale from 0 (Strongly  
899 disagree) to 5 (Strongly agree). Internal consistency reliability for the current  
900 sample is  $\alpha = 0.85$ .

### 901 **1.7.4 Spitefulness Scale**

902 The Spitefulness scale (D. K. Marcus et al., 2014) is a measure with seven-  
903 teen one-sentence vignettes to assess the spitefulness of participants. The original  
904 spitefulness scale has 31-items. In the original Marcus and colleagues’ paper, fif-  
905 teen were removed. For the present study, however, 4-items were removed because  
906 they did not meet the parameters for the study i.e., needed to be dyadic, more  
907 personal. Three reverse-scored items from the original thirty-one were added af-  
908 ter meeting the requirements. Example questions included, “It might be worth  
909 risking my reputation in order to spread gossip about someone I did not like,” and  
910 “Part of me enjoys seeing the people I do not like to fail even if their failure hurts

me in some way”. Items are scored on a 5-point scale ranging from 1 (“Strongly disagree”) to 5 (“Strongly agree”). Higher spitefulness scores represent higher acceptance of spiteful attitudes. Internal consistency reliability for the current sample is  $\alpha = 0.84$ .

### 1.7.5 *Sexuality Self-Esteem Subscale*

The Sexuality Self-Esteem subscale (SSES; Snell and Papini (1989)) is a subset of the Sexuality scale that measures the overall self-esteem of participants. Due to the nature of the study, the sexuality subscale was chosen from the overall 30-item scale. The 10-items chosen reflected questions on the sexual esteem of participants on a 5-point scale of +2 (Agree) and -2 (Disagree). For ease of online use the scale was changed to 1 (“Disagree”) and 5 (“Agree”), data analysis will follow the sexuality scale scoring procedure. Example questions are, “I am a good sexual partner,” and “I sometimes have doubts about my sexual competence.” Higher scores indicate a higher acceptance of high self-esteem statements. Internal consistency reliability for the current sample is  $\alpha = 0.95$ .

### 1.7.6 *Sexual Jealousy Subscale*

The Sexual Jealousy subscale by Worley and Samp (2014) are 3-items from the 12-item Jealousy scale. The overall jealousy scale measures jealousy in friendships ranging from sexual to companionship. The 3-items are “I would worry about my partner being sexually unfaithful to me.”, “I would suspect there is something going on sexually between my partner and their friend.”, and “I would suspect sexual attraction between my partner and their friend.” The items are scored on a 5-point scale ranging from 1 (“Strongly disagree”) to 5 (“Strongly agree”). Higher scores indicate a tendency to be more sexually jealous. Internal consistency reliability for the current sample is  $\alpha = 0.72$ .

### 936 1.7.7 *Sexual Relationship Power Scale*

937 The Sexual Relationship Power Scale (SRPS; Pulerwitz et al. (2000)) is  
938 a 23-item scale that measures the overall power distribution in a sexually active  
939 relationship. The SRPS is split into the Relationship Control Factor/Subscale  
940 (RCF) and the Decision-Making Dominance Factor/Subscale (DMDF). The RCF  
941 measures the relationship between the partners on their agreement with state-  
942 ments such as, “If I asked my partner to use a condom, he[they] would get vi-  
943 olent.”, and “I feel trapped or stuck in our relationship.” Items from the RCF  
944 are scored on a 4-point scale ranging from 1 (“Strongly agree”) to 4 (“Strongly  
945 disagree”). Lower scores indicate an imbalance in the relationship where the par-  
946 ticipant indicates they believe they have less control in the relationship. Internal  
947 consistency reliability for the current sample is  $\alpha = 0.87$ .

948 The DMDF measures the dominance level of sexual and social decisions in  
949 the relationship. Example questions include, “Who usually has more say about  
950 whether you have sex?”, and “Who usually has more say about when you talk  
951 about serious things?” Items on the DMDF are scored on a 3-item scale of 1  
952 (“Your Partner”), 2 (“Both of You Equally”), and 3 (“You”). Higher scores indi-  
953 cate more dominance by the participant in the relationship. Internal consistency  
954 reliability for the current sample is  $\alpha = 0.64$ .

### 955 1.7.8 *Scenario Realism Question*

956 Following Worley and Samp in their 2014 paper on using vi-  
957 gnettes/scenarios in psychological studies, a question asking the participant how  
958 realistic or how much they can visualize the scenario is. The 1-item question is  
959 “This type of situation is realistic.” The item is scored on a 5-point scale with how  
960 much the participants agreed with the above statement, 1 (“Strongly agree”) to  
961 5 (“Strongly disagree”). Higher scores indicate disagreement with the statement  
962 and reflect the belief that the scenario is not realistic.

### 963 1.7.9 *Spiteful Vignettes*

964 After participants complete the above scales, they are presented with 10-  
965 hypothetical vignettes. Each vignette was written to reflect a dyadic or triadic  
966 relationship with androgynous names to control for gender. Five vignettes have  
967 a sexual component while five are sexually neutral. An example vignette is,

968 “Casey and Cole have been dating for 6 years. A year ago, they both  
969 moved into a new flat together just outside of the city. Casey had an  
970 affair with Cole’s best-friend. Casey had recently found out that they  
971 had an STI that they had gotten from Cole’s best-friend. Casey and  
972 Cole had sex and later Cole found out they had an STI.”

973 For each vignette, the participant is asked to rate each vignette on how  
974 justified they believe the primary individual, Casey in the above, is with their  
975 spiteful reaction. Scoring ranges from 1 (“Not justified at all”) to 5 (“Being  
976 very justified”). Higher scores overall indicate higher agreement with spiteful  
977 behaviors.

## 978 1.8 Procedure

979 Participants were recruited on Prolific Academic. Participants must be  
980 18-years of age or older, restriction by study design and Prolific Academic’s user  
981 policy. The published study is titled, “Moral Choice and Behavior”. The study  
982 description follows the participant information sheet including participant com-  
983 pensation. Participants were asked to accept their participation in the study.  
984 Participants were then automatically sent to the main survey (Qualtrics, Inc.).

985 Once participants accessed the main survey, they were presented with the  
986 consent form for which to accept they responded by selecting “Yes”. Participants  
987 were then asked to provide demographic characteristics such as gender, ethnic-  
988 ity, and educational attainment. Participants would then complete in order, the



spitefulness scale, the sexual relationship power scale, the sexual jealousy subscale, and sexuality self-esteem subscale. Next, participants were presented ten vignettes where they were instructed to rate on the level of justification for the action carried out in the vignette. After each vignette, participants would rate the realism of the scenario. Upon completion of the survey (median completion time 20 minutes SD = 10 Minutes 30 seconds), participants were shown a debriefing message and shown the contact information of the Primary Investigator (Andrew Ithurburn). Participants were then compensated at £8/hr. via Prolific Academic.

## 1.9 Data Analysis

Demographic characteristics were analyzed using a one-way analysis for continuous variables (age) and Chi-squares tests for categorical variables (sex, ethnicity, ethnic origin, and educational attainment). Means and standard deviations were calculated for the surveys along with correlational analyses (e.g., spitefulness, SESS, SRPS, SJS).

Bayesian multilevel models were used to test differences between levels of justifications of vignettes that are either sexually or non-sexually vindictive in behavior.

## 1.10 Results and Discussion

Ninety-Two individuals participated in the present experiment. A majority of the participants in experiment 1 identified as male ( $n = 62$ ). Table 1 shows the demographic information for experiment 1. Table 2 presents the results of a Bayesian correlational matrix of all measures. As evidenced in the Bayesian correlational matrix, most surveys positively correlated with one another.

**Table 1***Participant Demographic Information (Experiment 1)*

Demographic Characteristic	
Age	
Mean (SD)	26.14 (8.69)
Median [Min, Max]	23 [18,60]
Gender	
Female	30 (32.6%)
Male	62 (67.4%)
Ethnic Origin	
Scottish	2 (2.2%)
English	10 (10.9%)
European	69 (75.0%)
Latin American	2 (2.2%)
Asian	5 (5.4%)
Arab	1 (1.1%)
Other	2 (2.2%)
Prefer not to answer	1 (1.1%)
Education	
Primary School	3 (3.3%)
GCSEs or Equivalent	8 (8.7%)
A-Levels or Equivalent	32 (34.8%)
University Undergraduate Program	31 (33.7%)
University Post-Graduate Program	17 (18.5%)
Prefer not to answer	1 (1.1%)
Ethnicity	
White	82 (89.1%)
Mixed or Multiple ethnic origins	4 (4.3%)
Asian or Asian Scottish or Asian British	5 (5.4%)
Other ethnic group	1 (1.1%)

**Table 2***Bayesian Correlation with 95% Credibility Intervals*

	Estimate	Upper CI	Lower CI
SSES * SRPS	-0.40	-0.45	-0.34
SSES * Spite	0.08	0.02	0.14
SRPS * Spite	-0.16	-0.23	-0.10
SSES * SJS	0.23	0.17	0.29
SRPS * SJS	-0.27	-0.33	-0.21
Spite * SJS	0.19	0.12	0.25
SSES * Dominance	-0.20	-0.26	-0.14
SRPS * Dominance	0.07	0.00	0.13
Spite * Dominance	0.50	0.45	0.54
SJS * Dominance	0.25	0.19	0.31
SSES * Prestige	-0.07	-0.13	0.00
SRPS * Prestige	0.27	0.21	0.33
Spite * Prestige	0.06	0.00	0.13
SJS * Prestige	-0.01	-0.08	0.05
Dominance * Prestige	0.19	0.12	0.25
SSES * Leadership	-0.29	-0.35	-0.23
SRPS * Leadership	0.30	0.24	0.36
Spite * Leadership	-0.03	-0.09	0.04
SJS * Leadership	-0.08	-0.15	-0.02
Dominance * Leadership	0.31	0.25	0.36
Prestige * Leadership	0.37	0.31	0.42

### 1.10.1 *Spitefulness*

For this analysis we used the Bayesian parameter estimation using R and brms (Bürkner, 2018; R Core Team, 2021). An annotated r script file, including all necessary information is available at <https://osf.io/jz6qb>. On average, individuals were not rated as being more spiteful, ( $M = 33.92$ ,  $SD = 9.32$ ,  $\text{Min-max} = [16 - 57]$ ). Justification as a function of the four indices was moderately explained by the model ( $R^2 = 0.54$ ). We conducted an exploratory Bayesian correlation analysis on the data, where we investigated correlations between 8 of the indices (e.g., Spite, Dominance, Prestige, Leadership, Sexual Jealousy, Sexual Self-Esteem, and Sexual Relationship Power Scale).

Selected notable non-null correlations were found between Spite and Sex-

ual Jealousy (95% CI: [0.12, 0.25]), Spite and Dominance (95% CI: [0.45, 0.54]),  
and Sexual Relationship Power and Dominance (95% CI: [0, 0.13]). Table 2  
contains a complete list of all Bayesian correlations.

## 1.11 Limitations and Future Directions

## 1.12 Experiment 2

## 1.13 Methods

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

Following experiment 1, 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: 212-2021/2]. The present study was pre-registered along with a copy of  
anonymized data and a copy of the R code is available at (<https://osf.io/s4j7y>).

## 1.14 Materials

### 1.14.1 Brief-Pathological Narcissism Inventory

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

1050 Inventory (PNI; Pincus et al., 2009). Like the PNI the B-PNI is a scale measuring  
1051 individuals' pathological narcissism. Items in the B-PNI retained all 7 patholog-  
1052 ical narcissism facets from the original PNI (e.g., exploitativeness, self-sacrificing  
1053 self-enhancement, grandiose fantasy, contingent self-esteem, hiding the self, de-  
1054 valuing, and entitlement rage). Each item is rated on a 5 point Likert scale  
1055 ranging from 1 (not at all like me) to 5 (very much like me). Example items  
1056 include "I find it easy to manipulate people" and "I can read people like a book."

### 1057 1.15 Procedure

1058 Participants were recruited via a study landing page on Prolific's website  
1059 or via a direct e-mail to eligible participants (Prolific Academic, 2018). The study  
1060 landing page included a brief description of the study including any risks and ben-  
1061 efits along with expected compensation for successful completion. Participants  
1062 accepted participation in the experiment and were directed to the main survey  
1063 on pavlovia.org (an online JavaScript hosting website similar to Qualtrics) where  
1064 they were shown a brief message on study consent.

1065 Once participants consented to participate in the experiment they an-  
1066 swered a series of demographic questions. Once completed, participants com-  
1067 pleted the Dominance, Prestige, and Leadership Scale and the Domain Specific  
1068 Risk-taking scale. An additional survey was added (the novel aspect of experi-  
1069 ment 2) where participants, in addition to the two previous surveys, were asked to  
1070 complete the brief-pathological narcissism inventory. The three scales were coun-  
1071 terbalanced to account for order effects. After completion of the main survey,  
1072 participants were shown a debriefing statement that briefly mentions the purpose  
1073 of the experiment along with the contact information of the main researcher (AI).  
1074 Participants were compensated £4.00 via Prolific Academic.

## 1075 **1.16 Data analysis**

1076 Demographic characteristics were analyzed using multiple regression for  
1077 continuous variables (age) and Chi-square tests for categorical variables (gender,  
1078 race, ethnicity, ethnic origin, and education). Means and standard deviations  
1079 were calculated for the relevant scales (i.e., DoPL and DOSPERT). All analyses  
1080 were done using (R Core Team, 2021) along with (Bürkner, 2017) package.

1081 The use of bayesian statistics has a multitude of benefits to statistical  
1082 analysis and research design. One important benefit is through the use of prior  
1083 data in future analyses. Termed as priors, is the use of prior distributions for  
1084 future analysis. This allows for the separation of how the data might have been  
1085 collected or what the intention was. In essence, the data is the data without the  
1086 interpretation of the scientist.

1087 All relevant analyses were conducted in a Bayesian framework using the  
1088 brms package (Bürkner, 2018) along with the cmdstanr packages notes (Gabry &  
1089 Cesnovar, 2021). In addition to the aforementioned packages, we used bayestestR,  
1090 rstan, and papaja for analysis along with the creation of this manuscript (Aust  
1091 & Barth, 2020; Makowski et al., 2019; Stan Development Team, 2020).

## 1092 **1.17 Results**

## 1093 **1.18 Preregistered Analyses**

### 1094 **1.18.1 Demographic and DoPL**

## 1095 **1.19 Domain-Specific Risk-Taking**

## 1096 **1.20 Interactions**

## 1097 **1.21 Discussion**

## 1098 **1.22 Limitations**

## 1099 **1.23 Future Implications**

**Table 3**

	Parameter	CI	CI_low	CI_high
8	b_Intercept	0.95	0.74	3.27
18	b_Spite_z	0.95	0.06	0.24
5	b_Dominance_z:ContentSexual	0.95	0.01	0.28

## 2 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; M. 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 leaders 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.

### 2.1 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 individ-

1122 uals in power sought power or were bestowed upon them. Often these dominant  
1123 individuals will wield their power with force and potentially cause risk to them-  
1124 selves to hold onto that power.

### 1125 **2.1.1 Dominance**

1126 The dominance motive is one of the more researched methods and well-  
1127 depicted power motives. Individuals with a dominant orientation display the more  
1128 primal of human behavior. These individuals will seek power through direct meth-  
1129 ods such as asserting dominance, control over resources, or physically assaulting  
1130 someone (M. W. Johnson & Bruner, 2012; Winter, 1993). Early research in dom-  
1131 inance motives has shown that acts of dominance ranging from asserting physical  
1132 dominance over another to physical displays of violence has been shown in many  
1133 mammalian species, including humans (Petersen et al., 2018; Rosenthal et al.,  
1134 2012).

1135 Individuals high in dominance are often high in Machiavellianism, nar-  
1136 cissism, and often are prone to risky behavior (discussion further in the next  
1137 section). Continued research has hinted at a possible tendency for males to dis-  
1138 play these dominant seeking traits more than females (Bareket & Shnabel, 2020;  
1139 Sidanius et al., 2000). When high dominance individuals assert themselves they  
1140 are doing so to increase their sense of power (C. Anderson et al., 2012; Bierstedt,  
1141 1950). Asserting one's sense of dominance over another can be a dangerous task.  
1142 In the animal kingdom, it can often lead to injury. While, in humans asserting  
1143 dominance can take a multitude of actions such as leering behaviors, physical dis-  
1144 tance, or other non-verbal methods to display dominance (Petersen et al., 2018;  
1145 Witkower et al., 2020). Power from a dominant perspective is not always be-  
1146 stowed upon someone. Often, high dominance individuals will take control and  
1147 hold onto it.



## 1148 2.1.2 Prestige

1149 Contrary to the dominant motivation of using intimidation and aggression  
1150 to gain more power, a prestige motivation or prestige, in general, is bestowed  
1151 upon an individual from others in the community (Maner & Case, 2016;  
1152 Suessenbach et al., 2019). Different from the dominance motivation, a prestige  
1153 motivation is generally unique to the human species (Maner & Case, 2016).  
1154 Due in part to ancestral human groups being smaller hunter-gatherer societies,  
1155 individuals that displayed and used important behaviors beneficial to the larger  
1156 group were often valued and admired by the group. Therein, the social group  
1157 bestows the authority onto the individual. Generally, this type of behavior  
1158 can be passively achieved by the prestigious individual. However, this does  
1159 not remove the intent of the actor in that they too can see prestige from the  
1160 group, but the method of achieving that social status greatly differs from that of  
1161 dominance-seeking individuals.

1162

1163 Apart from dominance-motivated individuals that continually have to fight  
1164 for their right to have power over others, individuals that seek or were given power  
1165 through a prestige motivation are not generally challenged in the same sense as  
1166 dominant individuals. Displaying behaviors that the community would see as  
1167 beneficial would endear them into the community making the survival of the  
1168 community as a whole better (Maner & Case, 2016). Evolutionarily this would  
1169 increase the viability of the prestigious individual and their genes. Similar to  
1170 the dominance perspective, the prestige perspective overall increases the power  
1171 and future survivability of the individual. However, due to the natural difference  
1172 between prestige and dominance, dominance-seeking individuals are challenged  
1173 more often resulting in more danger to their position (M. W. Johnson & Bruner,  
1174 2012).

### 1175 2.1.3 Leadership

1176 With a shared goal a leader is someone that takes initiative and attracts  
1177 followers for that shared goal (Van Vugt, 2006). Leadership is an interesting  
1178 aspect of behavior in that it is almost exclusive to human interaction. Dis-  
1179 cussions by evolutionary psychologists point to the formation of early human  
1180 hunter-gatherer groups where the close interconnectedness created a breeding  
1181 ground for leadership roles. As early humans began to evolve it would become  
1182 advantageous for individuals to work together for a common goal (King et  
1183 al., 2009). Often, individuals with more knowledge of a given problem would  
1184 demonstrate leadership and take charge or be given power. Multiple explanations  
1185 of the evolution of leadership exist such as coordination strategies, safety, along  
1186 with evidence for growth in social intelligence in humans (King et al., 2009; Van  
1187 Vugt, 2006).

1188

1189 An interesting aspect of leadership motivation is the verification of the  
1190 qualities of the leader by the communities. Individuals that are often put into  
1191 leadership roles or take a leadership role often display the necessary goals, qual-  
1192 ities, and knowledge to accomplish the shared/stated goal. However, this is not  
1193 always the case, especially for those charismatic leaders where they could stay  
1194 on as a leader longer than the stated goal requires (Vugt & Ronay, 2014). Tra-  
1195 ditionally, leadership was thought to be fluid in that those with the necessary  
1196 knowledge at the time would be judged and appointed as the leader. However,  
1197 these charismatic leaders use their charisma, uniqueness, nerve, and talent to hold  
1198 onto their status. ## Risk

1199 Every time people leave the relative safety of their home, every decision  
1200 they make they are taking some form of risk. Financial risk is often discussed  
1201 in the media usually concerning the stock market. However, the risk is not  
1202 just present in finances but also in social interactions such as social risk, sexual

1203 risk, health and safety risk, recreational, and ethical risks (Breakwell, 2007;  
1204 Kühberger & Tanner, 2009; Shearer et al., 2005; Weber et al., 2002). Each  
1205 individual is different in their likelihood and perception of participating in those  
1206 risks. Some will be more inclined to be more financially risky while others would  
1207 risk their health and safety.

1208

1209 Whether to engage in a risky situation is very complex depending on a  
1210 cost-benefit analysis (P. S. Johnson et al., 2015). Do the positives outweigh  
1211 the negatives? In practice, not all individuals will do a cost-benefit analysis of  
1212 a risky situation. Often, the timing of an event makes such an analysis dis-  
1213 advantageous. The benefits are often relative to the individual decision-maker.  
1214 Differences emerge in the general likelihood to engage in risky behavior such that  
1215 males tend to be more likely to engage in risky behaviors than their female coun-  
1216 terparts (Chen & John, 2021; Desiderato & Crawford, 1995). Women tended to  
1217 avoid risky situations except for social risks.

## 1218 **2.2 The present study**

1219 The present study sought to further our understanding of dominance, pres-  
1220 tige, and leadership motivations in human decision-making. Furthering this, we  
1221 seek to bridge the connection between risk-taking behaviors, from diverse do-  
1222 mains, and the dominance, prestige, and leadership orientations. Following the  
1223 literature, we predicted that participants that were high in dominance orientation  
1224 would be more likely to not only engage in risky behaviors but praise the ben-  
1225 efits of participating in those behaviors. Individuals with prestige or leadership  
1226 orientation.

### 1227 **# Experiment 1 ## Methods**

1228 Participants were a convenience sample of 111 individuals from Prolific  
1229 Academic’s crowdsourcing platform ([www.prolific.io](http://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>).

## 2.3 Materials

### 2.3.1 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.

### 2.3.2 Dominance, Prestige, and Leadership Orientation

The 18-item Dominance, Prestige, and Leadership scale, DoPL (Suessenbach et al., 2019), is used to measure dominance, prestige, and leadership orientation. Each question corresponds to one of the three domains. Each domain is scored across six unique items related to those domains (e.g., “I relish opportunities in which I can lead others” for leadership) rated on a scale from 0 (Strongly disagree) to 5 (Strongly agree). Included in this scale are 15 masking questions obtained from the unified motives scale [20] consistency reliability for the current sample is  $\alpha = 0.86$ .

### 1254 2.3.3 Domain Specific Risk-taking Scale

1255 The 40-item Domain-Specific Risk-taking Scale, DOSPERT (Weber et al.,  
1256 2002) is a scale assessing individuals' likelihood of engaging in risky behaviors  
1257 within 5 domain-specific risky situations: financial ("Gambling a week's income  
1258 at a casino."), social ("Admitting that your tastes are different from those of your  
1259 friends"), recreational ("Trying out bungee jumping at least once"), health and  
1260 safety ("Engaging in unprotected sex"), and ethical ("Cheating on an exam")  
1261 situations. Each risky situation is then rated on a five-point Likert scale (1 being  
1262 very unlikely and 5 being very likely). Two additional five-point Likert scales  
1263 assess risk perception and expected benefits (1 being not at all risky and 5 being  
1264 extremely risky; 1 being no benefits at all and 5 being great benefits) respectively.  
1265 Example risky situations are "Admitting that your tastes are different from those  
1266 of a friend" and "Drinking heavily at a social function." Internal consistency  
1267 reliability for the current samples for the 3 sub-domains are  $\alpha = 0.85$ ,  $\alpha = 0.90$ ,  
1268  $\alpha = 0.92$  respectively.

## 1269 2.4 Procedure

1270 Participants were recruited via a study landing page on Prolific's web-  
1271 site or via a direct e-mail to eligible participants (Prolific Academic, 2018). The  
1272 study landing page included a brief description of the study including any risks  
1273 and benefits along with expected compensation for successful completion. Par-  
1274 ticipants accepted participation in the experiment and were directed to the main  
1275 survey (Qualtrics, Inc; Provo, UT) where they were shown a brief message on  
1276 study consent.

1277 Once participants consented to participate in the experiment they an-  
1278 swered a series of demographic questions. Once completed, participants com-  
1279 pleted the Dominance, Prestige, and Leadership Scale and the Domain Specific  
1280 Risk-taking scale. The two scales were counterbalanced to account for order ef-

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.

## 2.5 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).

## 2.6 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

**Table 4***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%)

information for the participants. The average completion time for participants was 20M 58s ( $SD = 10M\ 43s$ ).

### 2.6.1 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).

### 2.6.2 Demographic and DoPL

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

**Table 5**

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

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.

## 2.7 Domain-Specific Risk-Taking

As predicted individuals that identified as male were more likely

## 2.8 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.

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



## 1332 **2.9 Discussion**

## 1333 **2.10 Experiment 2**

## 1334 **2.11 Methods**

1335 Materials remain the same in terms of the (1) Demographic Questionnaire,  
1336 (2) Dominance, Prestige, and Leadership Questionnaire, and (3) DOSPERT  
1337 Questionnaire. However, we added the Brief-Pathological Narcissism Inventory to  
1338 assess possible interactions of dominance and narcissism in risky decision-making.  
1339 Materials and methods were approved by the University of ## Participants

1340 Following experiment 1, participants were a convenience sample of 111  
1341 individuals from Prolific Academic’s crowdsourcing platform ([www.prolific.io](http://www.prolific.io)).  
1342 Prolific Academic is an online crowdsourcing service that provides participants  
1343 access to studies hosted on third-party websites. Participants were required to be  
1344 18 years of age or older and be able to read and understand English. Participants  
1345 received £4.00, which is above the current minimum wage pro-rata in the United  
1346 Kingdom, as compensation for completing the survey. The Psychology Research  
1347 Ethics Committee at the University of Edinburgh approved all study procedures  
1348 [ref: 212-2021/2]. The present study was pre-registered along with a copy of  
1349 anonymized data and a copy of the R code is available at ([https://osf.io/](https://osf.io/s4j7y)  
1350 [s4j7y](https://osf.io/s4j7y)).

## 1351 **2.12 Materials**

### 1352 **2.12.1 Brief-Pathological Narcissism Inventory**

1353 The 28 item Brief Pathological Narcissism Inventory (B-PNI; Schoenleber  
1354 et al., 2015) is a modified scale of the original 52-item Pathological Narcissism  
1355 Inventory (PNI; Pincus et al., 2009). Like the PNI the B-PNI is a scale measuring  
1356 individuals’ pathological narcissism. Items in the B-PNI retained all 7 patholog-  
1357 ical narcissism facets from the original PNI (e.g., exploitativeness, self-sacrificing

1358 self-enhancement, grandiose fantasy, contingent self-esteem, hiding the self, de-  
1359 valuing, and entitlement rage). Each item is rated on a 5 point Likert scale  
1360 ranging from 1 (not at all like me) to 5 (very much like me). Example items  
1361 include “I find it easy to manipulate people” and “I can read people like a book.”

### 1362 **2.13 Procedure**

1363 Participants were recruited via a study landing page on Prolific’s website  
1364 or via a direct e-mail to eligible participants (Prolific Academic, 2018). The study  
1365 landing page included a brief description of the study including any risks and ben-  
1366 efits along with expected compensation for successful completion. Participants  
1367 accepted participation in the experiment and were directed to the main survey  
1368 on pavlovia.org (an online JavaScript hosting website similar to Qualtrics) where  
1369 they were shown a brief message on study consent.

1370 Once participants consented to participate in the experiment they an-  
1371 swered a series of demographic questions. Once completed, participants com-  
1372 pleted the Dominance, Prestige, and Leadership Scale and the Domain Specific  
1373 Risk-taking scale. An additional survey was added (the novel aspect of experi-  
1374 ment 2) where participants, in addition to the two previous surveys, were asked to  
1375 complete the brief-pathological narcissism inventory. The three scales were coun-  
1376 terbalanced to account for order effects. After completion of the main survey,  
1377 participants were shown a debriefing statement that briefly mentions the purpose  
1378 of the experiment along with the contact information of the main researcher (AI).  
1379 Participants were compensated £4.00 via Prolific Academic.

### 1380 **2.14 Data analysis**

1381 Demographic characteristics were analyzed using multiple regression for  
1382 continuous variables (age) and Chi-square tests for categorical variables (gender,  
1383 race, ethnicity, ethnic origin, and education). Means and standard deviations

1384 were calculated for the relevant scales (i.e., DoPL and DOSPERT). All analyses  
1385 were done using (R Core Team, 2021) along with (Bürkner, 2017) package.

1386 The use of bayesian statistics has a multitude of benefits to statistical  
1387 analysis and research design. One important benefit is through the use of prior  
1388 data in future analyses. Termed as priors, is the use of prior distributions for  
1389 future analysis. This allows for the separation of how the data might have been  
1390 collected or what the intention was. In essence, the data is the data without the  
1391 interpretation of the scientist.

1392 All relevant analyses were conducted in a Bayesian framework using the  
1393 brms package (Bürkner, 2018) along with the cmdstanr packages notes (Gabry &  
1394 Cesnovar, 2021). In addition to the aforementioned packages, we used bayestestR,  
1395 rstan, and papaja for analysis along with the creation of this manuscript (Aust  
1396 & Barth, 2020; Makowski et al., 2019; Stan Development Team, 2020).

## 1397 **2.15 Results**

## 1398 **2.16 Preregistered Analyses**

### 1399 **2.16.1 Demographic and DoPL**

## 1400 **2.17 Domain-Specific Risk-Taking**

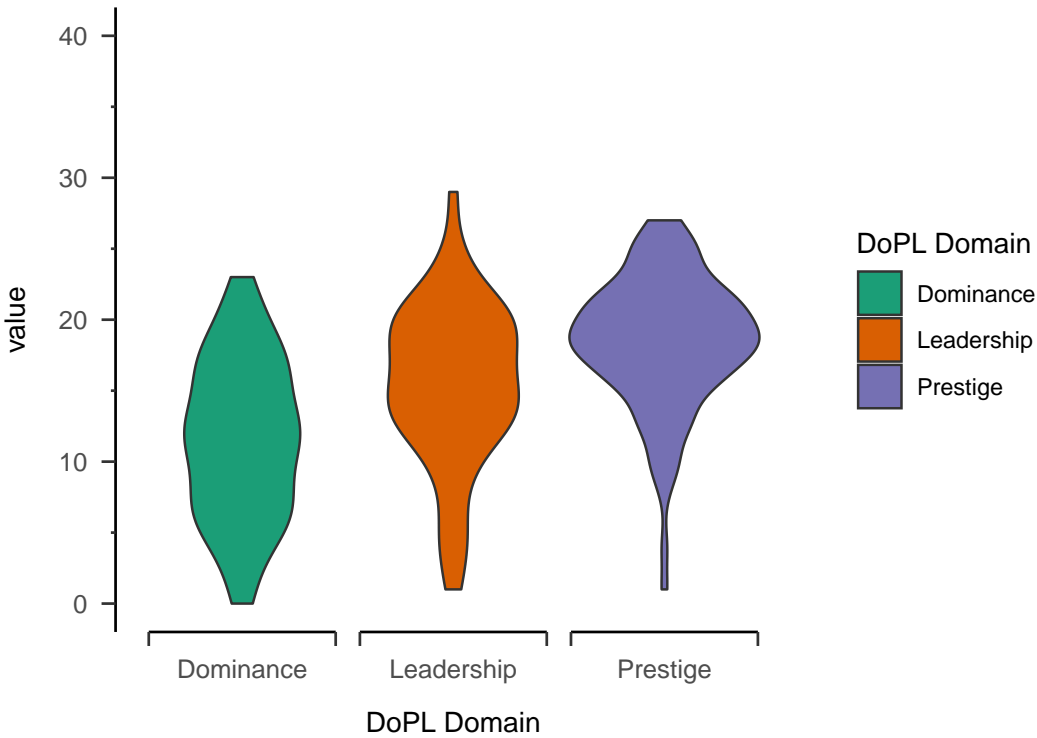
## 1401 **2.18 Interactions**

## 1402 **2.19 Discussion**

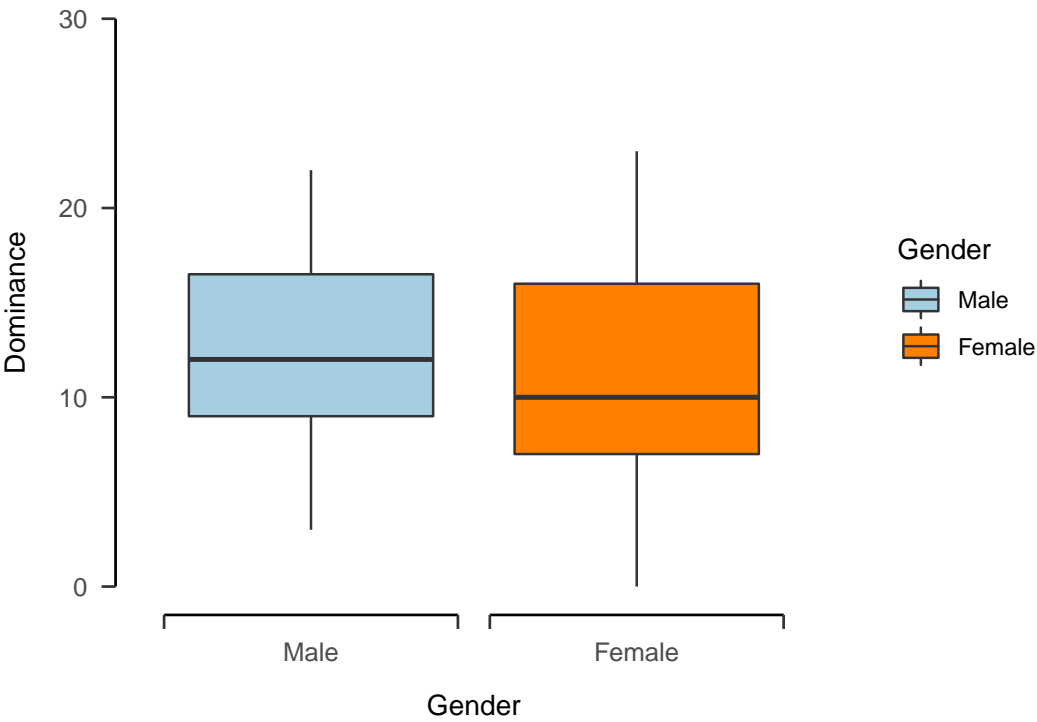
## 1403 **2.20 Limitations**

## 1404 **2.21 Future Implications**

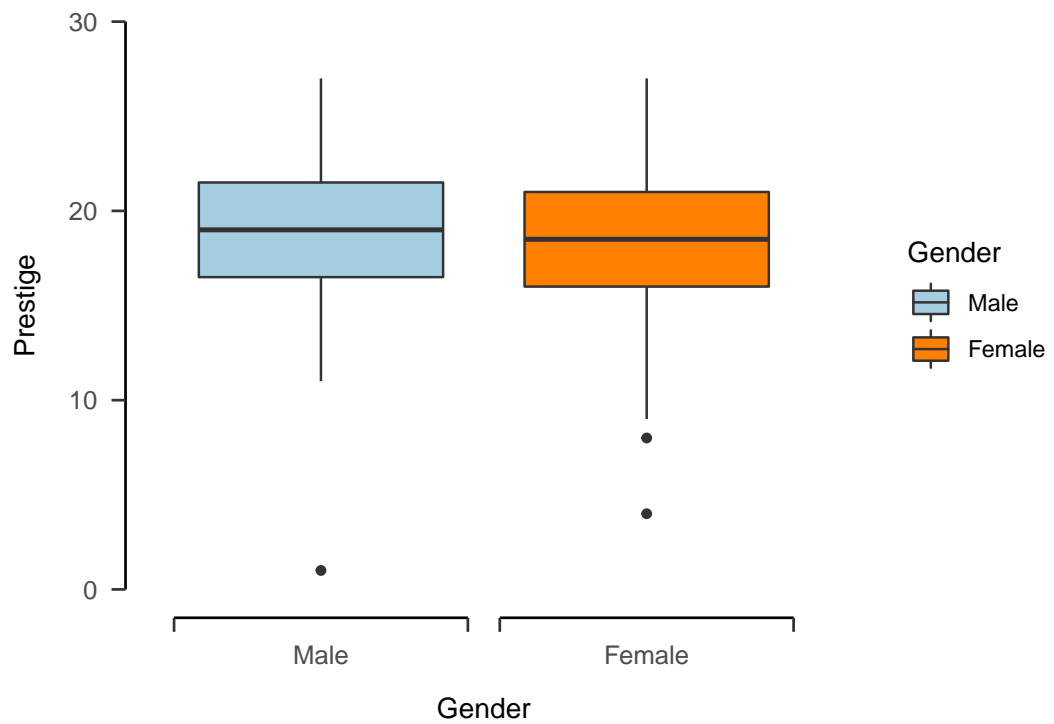
3 Figures and Tables



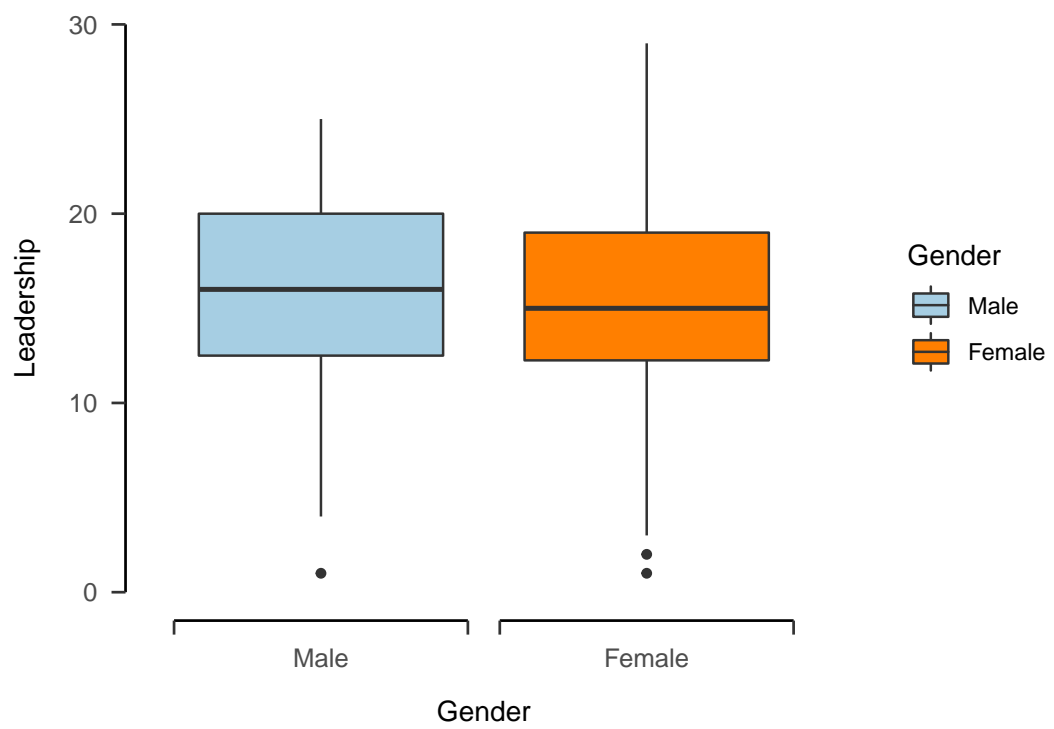
1406



1407



1408



1409

**Table 6**

	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 7**

Parameter	CI	CI_low	CI_high
b_ethicalPreference_Intercept	0.95	2.85	4.42
b_ethicalPreference_dominanceSum	0.95	0.61	1.71
b_financialPreference_Intercept	0.95	7.50	9.67
b_financialPreference_dominanceSum	0.95	0.14	1.59
b_socialPreference_Intercept	0.95	8.34	11.67
b_socialPreference_dominanceSum	0.95	0.60	2.87
b_healthAndSafetyPreference_Intercept	0.95	4.65	6.59
b_healthAndSafetyPreference_dominanceSum	0.95	0.41	1.77
b_recreationalPreference_Intercept	0.95	0.95	2.48
b_recreationalPreference_dominanceSum	0.95	0.66	1.74
b_recreationalPreference_Gender1	0.95	-1.83	-0.47
b_recreationalPreference_Age	0.95	0.06	0.87

## 4 Chapter 3:

### 4.1 Experiment 1:

### 4.2 Experiment 1 Review

In an extension of the previous research, we sought other areas of possible interest in what could be affecting individuals' likelihood to engage in either immoral or risky behaviors. So far we have shown a connection with power motives such as Dominance, Prestige, and leadership (DoPL); along with investigating the connection between DoPL and the domain-specific risk-taking scale. An intriguing area that has not been extensively researched is narcissism. Personality research is often the viewpoint at which narcissism is investigated such as us-

1420 ing the five-factor model concept where the primary traits are extraversion and  
1421 agreeableness (Hyatt et al., 2018).

### 1422 **4.3 Narcissism**

1423 Narcissism is a personality trait that originally was seen as a method or  
1424 mechanism to shield the individual from feelings of low self-worth (Yakeley, 2018).  
1425 The understanding of what narcissism soon shifted with a focus on empirical un-  
1426 derstandings of the individual. Researchers such as Jeffrey Young, who expanded  
1427 on the work of Aaron Beck, theorized that the core beliefs of an individual along  
1428 with negative self-schemas influence the individual to seek out or act in ways in  
1429 line with a narcissitic personality (J. E. Young et al., 2006). Conceptualizations  
1430 of narcissism would soon entail it to be an understanding of grandiose sense of  
1431 self, fantastical beliefs of success and general superiority, along with a general  
1432 lack of empathy (American Psychiatric Association, 2013; Okada, 2010; Yakeley,  
1433 2018)./ The earliest understandings of narcissism were through Sigmund Freud.  
1434 However, the term was first coined by Havelock Ellis who used the eponymous  
1435 Narcissus myth in the explanation of narcissism. Freud would then publish the  
1436 text *On Narcissism* to further our understanding of narcissism. Future under-  
1437 standings of narcissism would develop from a social cognitive framework of the  
1438 individual in relation to their environment. Such as Kernberg’s assessment that  
1439 narcissism stems from an aggressive and conflict filled childhood affecting the  
1440 child’s development and later aggression and envy towards others (Russell, 1985).

### 1441 **4.4 The present Experiments**

1442 Pathological narcissism at its core looks strikingly similar to self-esteem  
1443 and in turn a grandiose sense of self. Investigations at risky situations have looked  
1444 at sexual self-esteem, exploratory experiment one. The present experiment seeks  
1445 to expand to investigate the relationship between pathological narcissism and see  
1446 which is a stronger predictor of risky sexual situations and riskiness in general.

## 1447 **4.5 Methods**

1448 Participants were a convenience sample of 111 individuals from Prolific  
1449 Academic’s crowdsourcing platform ([www.prolific.io](http://www.prolific.io)). Prolific Academic is an  
1450 online crowdsourcing service that provides participants access to studies hosted  
1451 on third-party websites. Participants were required to be 18 years of age or  
1452 older and be able to read and understand English. Participants received £4.00,  
1453 which is above the current minimum wage pro-rata in the United Kingdom, as  
1454 compensation for completing the survey. The Psychology Research Ethics Com-  
1455 mittee at the University of Edinburgh approved all study procedures [ref: 174-  
1456 2122/5]. The present study was pre-registered along with a copy of anonymized  
1457 data along with a copy of the R code and supplemental materials are available  
1458 at (<https://osf.io/s4j7y>).

## 1459 **4.6 Materials**

### 1460 **4.6.1 Demographic Questionnaire**

1461 In a demographic questionnaire administered prior to the main survey,  
1462 participants were invited to respond to a series of questions about their self-  
1463 identified demographic characteristics such as age, gender, ethnicity, and ethnic  
1464 origin.

### 1465 **4.6.2 Sexual Risk-taking Behavior Scale**

1466 The 54-item Sexual Risk-taking Behavior Scale (SRTB; Spiegel & Pol-  
1467 lak, 2019), is a scale measuring individuals on their risk-taking by requesting  
1468 they respond to a series of statements and their agreement on three different do-  
1469 mains (i.e., Risk perception, likelihood, and benefit perception). They are then  
1470 given a series of statements of sexual activities and the frequency that they have  
1471 engaged in those behaviors. Example items for the first three domains are “Sex-  
1472 ual activity with multiple participants” and “Sex under influence of substances



1473 (drugs/alcohol).” For frequency, participants are asked to rate each sexual be-  
1474 havior on a scale of never [1] to at least once a day [8].

### 1475 **4.6.3 Sociosexual Orientation Inventory**

1476 The Sociosexual Orientation Inventory (SOI-R; Penke & Asendorpf, 2008)  
1477 is a 9 item scale asking participants a series of questions of how many times  
1478 participants have engaged in the questioned sexual behaviors. Example items are  
1479 “With how many different partners have you had sex with in the past 12 months?”  
1480 and “With how many different partners have you had sexual intercourse on one  
1481 and only one occasion?” rated on a scale from 0 to 20 or more.

### 1482 **4.6.4 Dominance, Prestige, and Leadership**

1483 The 18-item Dominance, Prestige, and Leadership scale (DoPL; Sussen-  
1484 bach et al., 2008), measures dominance, prestige, and leadership orientation.  
1485 Each question corresponds to one of the three domains. Each domain is scored  
1486 across 6 unique items related to those domains (e.g., “I relish opportunities in  
1487 which I can lead others” for leadership) rated on a scale from 0 (Strongly disagree)  
1488 to 5 (Strongly agree).

### 1489 **4.6.5 Pathological Narcissism**

1490 The brief Pathological Narcissism Inventory (B-PNI; Schoenleber et al.,  
1491 2015) is a 28 item inventory measuring individuals on 7 aspects of pathological  
1492 narcissism facet scales. Example items are “I feel important when others rely  
1493 on me” and “Sacrificing for others makes me the better person” rated on a scale  
1494 from 1 (not at all like me) to 5 (Very much like me).

## 1495 **4.7 Procedure**

1496 Participants were recruited via a study landing page on Prolific’s website  
1497 or via a direct e-mail to eligible participants (Prolific Academic, 2018). The study

1498 landing page included a brief description of the study including any risks and ben-  
1499 efits along with expected compensation for successful completion. Participants  
1500 accepted participation in the experiment and were directed to the main survey  
1501 (Pavlovia.org) where they were shown a brief message on study consent.

1502       Once participants consented to participate in the experiment they an-  
1503 swered a series of demographic questions. Once completed, participants com-  
1504 pleted the Dominance, Prestige, and Leadership Scale and the Domain Specific  
1505 Risk-taking scale. The two scales were counterbalanced to account for order ef-  
1506 fects. After completion of the main survey, participants were shown a debriefing  
1507 statement that briefly mentions the purpose of the experiment along with the  
1508 contact information of the main researcher (AI). Participants were compensated  
1509 with course credit on the University of Edinburgh’s SONA system.

## 1510 **4.8 Data analysis**

1511       Demographic characteristics were analyzed using multiple regression for  
1512 continuous variables (age) and Chi-square tests for categorical variables (gender,  
1513 race, ethnicity, ethnic origin, and education). Means and standard deviations  
1514 were calculated for the relevant scales (i.e., DoPL and SRTB). All analyses were  
1515 done using (R Core Team, 2021) along with (Bürkner, 2017) package.

1516       The use of bayesian statistics has a multitude of benefits to statistical  
1517 analysis and research design. One important benefit is through the use of prior  
1518 data in future analyses. Termed as priors, is the use of prior distributions for  
1519 future analysis. This allows for the separation of how the data might have been  
1520 collected or what the intention was. In essence, the data is the data without the  
1521 interpretation of the scientist.

1522       All relevant analyses were conducted in a Bayesian framework using the  
1523 brms package (Bürkner, 2018) along with the cmdstanr packages notes (Gabry &  
1524 Cesnovar, 2021). In addition to the aforementioned packages, we used bayestestR,

1525 rstan, and papaja (Aust & Barth, 2020; Makowski et al., 2019; Stan Development  
1526 Team, 2020).

## 1527 **4.9 Results**

### 1528 ***4.9.1 Preregistered Analyses***

### 1529 ***4.9.2 Demographic and DoPL***

## 1530 **4.10 Domain-Specific Risk-Taking**

## 1531 **4.11 Interactions**

## 1532 **4.12 Discussion**

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