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

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1 Chapter 1:

1.1 Literature Review

1.1.1 General Introduction

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

In 2016, the year of most recent global data collection, there were 376 million necases of the four curable sexually transmitted infections, chlamydia, gonorrheatrachomoniasis, and syphilis (World Health Organization, 2018). The World HealtOrganization [WHO] further estimates that there are one million new cases of a curablsexually transmitted infection each day. Due to multiple factors, certain minoritpopulations are more at risk for contracting new sexually transmitted infections, e., men who have sex with men and female sex workers (World Health Organization, 2018). Some factors includcertain societal beliefs men who have sex with men might engage in nonrelational sex “just trying to figure things out...it’s just a hook up phase” (Elder et al., 2015) , ambiguous laws concerning the legality of sex work interfering witsafe and available locations for such activity, as well as. There may alsbe some difficulties in their willingness in their activities be it forced by anotheor sheer necessity. For countries like Scotland there have been a reduction ithe amount of new cases of STIs like HIV amongst key populations, however new risks oantibiotic resistant gonorrhea, *Neisseria gonorrhoeae*, have shown a new prevalence in many countries (Ison & Alexander, 2011).

1.1.2 Who is at risk?

There is then the arduous task of how to research the topic of sexually transmitted infections and methods of then understanding what is occurring in the individual. There are neurobiological explanations such as certain brain for-

mations occurring that cause individuals to have difficulty understanding the consequences of their actions (Moll et al., 2005; Schaich Borg et al., 2008; Tsoi et al., 2018). There are also more cognitive explanations as well that have shown promising results. For example in the cognitive sub-area of metacognition there is an understanding that there are certain cognitive mechanisms that aid in the individuals ability to regulate their own cognitive understanding of their decisions (Anderson & Bushman, 2002; Yeung & Summerfield, 2012). This self-regulation then contributes to their ability to control whether they act on their baser needs or are able to understand the consequences of what they might or might not engage in (Anderson & Bushman, 2002; Crandall et al., 2017). How individuals had reached the information on the effectiveness of certain behavioral changes that reduce the chances of contracting an STI is also in question. For example, research shows that individuals that have a greater understanding of the impact and chances of contracting HIV, actually engage in risky sexual behaviors and therefore increase their chances of contracting the very infection they have more knowledge (Kirby et al., 2007). Skills based training showed more positive results on practicing safer sex practices. How an individual sees themselves as either a sexual person or person in general is also a factor in how they later may meet an STI (Andersen et al., 1994, 1999; Elder et al., 2015; Gesink et al., 2016). Aggression, in the cognitive sense, also has an impact as well demonstrating a dominance over another person that may cause difficulties in their own ability to make decisions on their sexual health (Malamuth et al., 1996; Williams et al., 2017).

Aggression is one method of exerting control over another individual. Overall, the exertion of control itself denotes a power disparity between parties which varies in effects, methods, and domains. [citation]. For example, most research has looked at power-over or one person controlling the behavior of another person. This area of research connects the cognitive explanation to behavioral outcomes. Research in power also includes looking at minority populations and aspects of power over to help explain the increased prevalence of certain STIs by discussing and researching certain power dynamics [citations]. The institutional support of those power dynamics often reflect power based on age, gender, political orientation, sexual orientation and gender identity (Anderson & Bushman, 2002; Chiappori & Molina, 2019; Volpe et al., 2013; Winter, 1988). Investigations of the power structure of a family unit has shown to have some interesting consequences on sexual health depending on the type of parenting style and parental attachment [Bugental and Shennum (2002); Chiappori and Molina (2019); Kim and Miller (2020); citations]. A new area of research coming out of power and cognition is the phenomenon where an individual will harm themselves in some

way to also inflict harm on another. This type of behavior has been researched extensively in the animal kingdom and is known as spiteful behavior in that one brings down their own wellbeing to spite the other person. There would be interesting avenues to research how spiteful thinking may affect an individual in how they choose one course of action over another. ### Current Methodology

An interesting aspect of the power dynamics and cognition is 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 (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.

148 1.2 Risky Sexual Behaviors and STIs

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

155 There is a large array of different sexually transmitted infections. Cur-
156 rently, there are eight common types of STIs, chlamydia, gonorrhea, trichomo-
157 niasis, genital warts, genital herpes, pubic lice, scabies, and syphilis (Carmona-
158 Gutierrez et al., 2016), chlamydia being the most common. Treatment for these
159 STIs can range from a simple course of antibiotics such as is the case with chlamy-
160 dia or gonorrhea. Conversely, treatment for syphilis or human immunodeficiency
161 virus [HIV], can be increasingly more involved, cause difficulty in daily life, and
162 have higher costs [citation]. Globally, 37.9 million people are living with HIV
163 [104,000 in the United Kingdom], with 1.7 million being under the age of 15
164 years old (Ison & Alexander, 2011). The treatment for HIV currently is through
165 antiretroviral medication, which is often a combination of multiple medications
166 to account for the high adaptability of the virus (Costa-Lourenço et al., 2017).

167 New difficulties appear from the most common treatment strategies. The
168 main strategy being through targeted and high doses of antibiotics. Concern
169 arises given the fluctuating nature of STI treatment and costs. As such, costs
170 for treatments have seen a markable increase with some treatments costing [en-
171 ter average amount]. An increasing number of antibiotic resistant gonorrhea is
172 occurring globally, with a recent discovery in Japan with a strain that is resistant
173 to ceftriaxone, the most prescribed antibiotic [citations]. Two individuals in the
174 United Kingdom recently [2019] separately tested positive with different strains
175 resistant to not just ceftriaxone but also azithromycin [citations]. The confirmed
176 cases may seem small however, 10% of men and half of women do not show visi-
177 ble symptoms when infected with the bacteria. Medical treatment alone has not
178 been the only strides made in STIs around the with strides in acceptances and
179 less persecution for those that have HIV for example. However, while persecution
180 and stereotyping has gone down in recent years, treatments and availability to
181 those treatments have become increasingly more costly.

182 Sexually active individuals can become infected with an STI through various
183 forms. The first and most prominent vector is through risky sexual behaviors,
184 i.e., multiple sexual partners, unknown sexual history of partners/high-risk indi-
185 viduals, and unprotected sex [citations]. The most common vector is through en-

gaging in unprotected sex. Condoms are the most common and effective method of protection, with spermicides increasing their effectiveness [citation]. Once infected, the STIs may have detrimental health effects. For example, genital herpes may cause infertility in women and certain types of cancers [citations]. Infections can also be transmitted to infants during childbirth. If left untreated death is possible for example in the case of syphilis which results in an agonizing death [citations]. Condoms are still one of the most effective strategies to practice safe sex along with asking partners about their sexual histories.

Even though condoms are the most effective prophylactic, there is still a chance that an individual may contract an STI. Other risky sexual behaviors can increase an individual's susceptibility such as having multiple sexual partners. The age of first sexual intercourse is one of the leading factors that has been associated with increased sexual risk taking and later transmission of STI (de Sanjose et al., 2008; Dickson et al., 1998; Tuoyire et al., 2018). Dickson and colleagues investigated the age at first sexual intercourse and found that women that had their first sexual intercourse before 16 years-old were more likely to report having contracted an STI. In the United Kingdom, age at first heterosexual intercourse has decreased over the last 70 years (Mercer et al., 2013). Mercer and colleagues conducted a longitudinal analysis of age at first sexual intercourse by separating individuals into birth cohorts. Individuals age 65-74 years reported their age at first heterosexual intercourse at 18 years. Every ten years that number has steadily decreased by one with the most recent being 16 years old. Thirty percent of individuals between the ages of 16-24 report have had heterosexual intercourse before the age of sixteen.

Individuals 18-24 years of age are not just having intercourse at earlier ages, they are the group with the highest susceptibility of contracting an STI, amounting for #### of new incidences [citation]. College students/aged individuals have also increased alcohol consumption which contributes to lowered inhibitions and increased risky sexual behavior. Because many are developing sexually including some living away from home for the first time, they are more likely to engage in sexual experimentation such as multiple sex partners and in some cases may not use protection such as a condom. Lack of communication has also been shown to influence the likeliness of contracting an STI. Desiderato and Crawford investigated risky sexual behaviors in college students and found that failing to report the number of previous sexual partners and their STI status was common in both men and women (1995). The social stigma of having contracted or being suspected of contracting an STI is one of the most common barriers that inhibits open communication between sexually active individuals (Cunningham et al., 2009). Stigma concerning a positive STI diagnosis can affect not just the

physical health of an individual but the psychological health as well. In a series of five experiments, Young and colleagues investigated how the belief of having an STI has an individual's likelihood of getting tested/treatment (2007). They discovered two key points on stigma, others perceive those that have an STI as being less moral and others believe that others will see them as being immoral. This threat of appearing to be immoral may cause the individual to feel as though the mere perception of having an STI is shameful (Cunningham et al., 2009).

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

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

1.3 Moral Judgment and Decision-Making

Sam has frequent and unprotected sex with multiple partners, resulting in a sexually transmitted infection that causes visible sores on the mouth and hands. On the way to the chemist one day, Sam has an acute heart attack. Bystanders rush to help, but see the sores on Sam's mouth and hands. How would the bystanders react? Would they resuscitate Sam? Would it be morally wrong

for them not to risk contracting an unknown disease from Sam, even if it may cost Sam's life? Similar sorts of dilemmas are often used to study moral decision making of various sorts [citations]. the thought experiment of the trolley dilemma. In research by Haidt and colleagues, compared psychologically normal adults to psychopathic traits and performance on the Moral Foundations Questionnaire [MFQ; Graham et al. (2011)]. Findings included higher psychopathic tendencies were associated with lower likelihood of following justice based norms, weak relationship with disgust-based and in-group norms, and finally an increased willingness to violate any type of norms for money [Glenn et al., 2008]. The key factor in the Moral Foundations Questionnaire are these moral foundations of which there are five moral domains: harm versus care, fairness versus cheating, loyalty versus betrayal, authority versus subversion, and purity versus degradation [citations]. Each of these moral domains have a good and bad component compared to the action type.

The MFQ has been extensively used in research on moral decision-making, with common subjects being on political thought [citation]. In the early studies of moral foundations theory, Haidt investigated the moral foundational differences between individuals that lean either politically liberal or conservative. Of the five moral domains, differences appeared in the likelihood of how either conservatism or liberalism affects the likelihood of individuals to endorse each domain. For example, liberalism suggests protecting the individual from harm by the society, especially if they are a member of a minority group. Conversely, conservatism, namely religious conservatism suggests a propensity for sanctity and purity, along with respecting authority and following the societal moral codes [citations]. Emotional valence is often the best predictors of moral judgments [citation]. The more emotional valence the faster the response time the decision-maker decides and the more staunchly held they are to their decision. Interestingly, participants would be unable to express or support the decisions that they made. Often, participants would downplay their decisions by laughing or stuttering (Haidt, 2001). Additionally, as their emotional valence of the decision is higher, people are consistently holding on to their judgments regardless if they were able to support their judgements when asked or not. It then makes sense why some individuals are more politically intransigent given their deeply held moral codes.

Politically held beliefs are often emotionally laden (G. Marcus, 2000). Accordingly, moral foundations theory postulates that there is a good versus bad in the moral domains. When participants are asked to respond to statements that are only offensive but were not harming anyone, participants had issues supporting whether the statement was good or bad. For example, when participants were given a story of cleaning the toilet with the national flag, participants would

301 respond that it is bad and said that they just knew that it was wrong [citation].
302 Often when individuals violate the moral rules of “cleaning the toilet with the
303 national flag” violators will be judged as immoral and sometimes punished for
304 their actions [citations]. Intuitively the participants responded that the actions
305 were morally were obviously morally wrong. Requiring little to no explanation
306 as to whAn interesting facet of moral judgment is how individuals react to moral
307 decisions when they are reminded of their own mortality (Greenberg et al., 1990;
308 Rosenblatt et al., 1989). Reminding individuals of their mortality causes them,
309 according to terror management theory, to want to push away from the thought
310 of their eventual death. To do this people often cling to their deeply held cultural
311 beliefs to remove their thoughts from reality (Greenberg et al., 1990). In the
312 first of a series of experiments Rosenblatt and colleagues found that participants
313 that were reminded of their mortality judged prostitutes more harshly, more so
314 if the participants already had negative opinions on prostitution. This was also
315 seen conversely with heroes that follow the cultural norms. Those participants
316 advocated for a larger reward for those individuals (Rosenblatt et al., 1989). The
317 already held opinions were further investigated to where Christians were asked
318 to report their impressions of Christian and Jewish individuals after mortality
319 became salient. Those that were a member of the in-group, Christian, were more
320 likely to be regarded as more positive than their out-group counterparts, Jewish
321 individuals (Greenberg et al., 1990). In-group bias is an oft studied concept in
322 psychological research. Mortality salience and moral violations tend to increase
323 the strength of the in-group bias and then moral judgement and condemnation
324 [citation].

325 When a person does a negative action, the reason for the action is often
326 judged and assumed. An action is commonly seen as being intentional when
327 the individual actively does the action directly. However, intentionality becomes
328 problematic participants have already had negative evaluations of the individ-
329 ual. In an experiment where participants were asked to judge the culpability of
330 an airline passenger that was forced by high-jackers to kill another passenger,
331 the high-jackers were the external force forcing the passenger to commit murder.
332 However, when the participants were told that the passenger already wanted to
333 kill that passenger before the hijacking was occurring, they were judged as more
334 culpable. With or without the internal motivation of wanting to already kill the
335 other passenger, the resulting death still occurs. When participants were given
336 a, less vivid, story of a manager that was only mistreated a black employee and
337 another story of a non-bigoted manager that was mistreating all of their employ-
338 ees, participants judged the bigoted manager more negatively. Even though there
339 were differences in those affected between the managers, participants already held

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

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

351 When individuals commit a moral violation, as would be the case for the
352 surviving passengers, it is not only important to investigate how others would
353 judge and react but also how the individual reacts to their own action (Tangney
354 et al., 2006). Emotional reactions occur when someone does a behavioral action,
355 or they expect a behavioral action to follow. An interesting aspect of emotional
356 reactions are emotional reactions tied to moral judgment. When an individual
357 violates a moral norm, they often feel a personal feeling of shame or guilt which
358 are two of the most commonly studied of these self-evaluative emotions (Tangney
359 et al., 2006). There is an inherent difference between these two emotions, shame is
360 inferred as being negative feelings of oneself that has a public display, while guilt
361 is similar sans the public display (Tangney et al., 1996). Individuals who violate
362 the community's customs on purity often feel a sense of shame. While guilt is
363 commonly felt with a violation of community [citations]. People with STIs are
364 often left feeling shame from their suspected purity violation and thus are often
365 stigmatized for their behavior and punished in some form by the community.
366 This can lead, as discussed in the previous section, to increasing their sense of
367 isolation and negative self-worth. How the moral violators react to their shame
368 or guilt is dependent on whether they experience the former or the latter. There
369 are often attempts to amend the situation when individuals have violated moral
370 norms. Depending on the self-evaluative emotion that is being felt, people will
371 make amends to try to change the situation or they may hide it (Tangney et al.,
372 1996). Guilt is the former and shame is the latter. In most cases individuals that
373 are feeling shame will attempt to ignore their moral violation where they will deny
374 or evade the situation that is causing them shame. Conversely, people with guilt
375 are often motivated by those negative feelings to fix the situation that caused
376 them to feel the guilt. Guilt is often feeling negativity towards a specific action
377 while feeling ashamed or shame is usually a reflection of the entire self [citations].
378 Thus, in relation to how to repair the guilt inducing act, it would appear to be

379 more manageable if the inducing situation was a singular event rather than a
380 feeling of the entire self. Participants that were prompted to feel shame were less
381 likely to express empathy for someone with a disability (Marschall, 1998 as cited
382 in Tangney et al., 2006). When people feel a sense of shame, they self-evaluate
383 and reflect on themselves. This hinders the empathy process that would require
384 them to focus their attention on the emotions of another person.

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

394 1.4 Power

395 A common denominator in research on the dark personality and moral
396 judgment is the influence of power. To define power, one would have to first
397 define the actor and the recipient of the power. Therefore, there is either power-
398 over, power-to, and power-with. Each aspect has their own different consequences
399 [citation]. Power-over is when there is one individual, the one with power, which
400 wields control over a subordinate individual [citation]. Power-to is when an in-
401 dividual of privilege uses their status and power to control and enact a certain
402 consequence [citation]. Finally, power-with is an interesting concept where a per-
403 son of power uses their own power to lift or elevate someone without power to a
404 power position [citation]. This is often seen in community projects where some-
405 one in power goes into a troubled community and facilitates the situation so that
406 those that have less power can have their voices be heard. Power also has var-
407 ious sources each with their own complex consequences: institutional, cultural,
408 gender, age, ethnicity, orientation, and gender-identity [citations]. Some sources
409 of power compound on one another to increase the level of power over other sin-
410 gular sources of power. For example, in many areas of the world a straight white
411 cisgender man would hold the most power relative to other individuals.

412 Power influences relationships be it romantic or familial, work, academics,
413 including each of their derivatives. The three variations of power have various
414 influences on each of the areas of life. Power is neither good nor bad, it is how
415 the power is used that makes it either good or bad [citation]. Power and power

416 structures are often in the media. Often when there is a military coup in a far-
417 off country, individuals discuss power-over. When a humanitarian goes into an
418 impoverished community to help their voices heard, power-with is discussed. As
419 with the previous example, when a legislator uses their influence to pass a law,
420 that legislator uses power-to.

421 Early discussions of power descended from Greek and Roman political
422 philosophy (Aristotle, 1984). Greek Philosopher, Plato's brothers Glaucon and
423 Adeimantus discuss the viability or requirement of citizens being just and lawful if
424 they are able to escape conviction because of some social power or fortune (Aris-
425 totle, 1984). Aristotle continued the discussion by posing the questions, "There is
426 also doubt as to what is to be the supreme power in the state: Is it the multitude?
427 Or the wealthy? Or the good?..." (Aristotle, 1984). Power discussions such as
428 that by Aristotle point to what is the source of someone's power. Does the power
429 come from the majority? Does it come from money? Does it come from those
430 that are just? Each source of power has different effects on those that are gov-
431 erned by those with that power. Polybius of Greece discussed how a constitution
432 should be created and power should be delineated. Polybius power should be
433 split between multiple groups, each with a different form of power and distinct
434 genre to wield that power [citation]. Power continued to be discussed well beyond
435 the Greek philosophers and continued by political researchers and philosophers.
436 Discussions of power soon developed into research on how it influences at the
437 community level.

438 Sociologists, following many of the philosophical thought experiments pre-
439 vious and current to the time, began to research power. Sociologists soon devel-
440 oped the area of research in social power, where political power was a subset.
441 According to Bierstadt, power is always successful, whenever it fails then it is no
442 longer power [1950]. Sociologists asserted that power be conceived of as a force,
443 something that is applied to control a situation. Power can also be conceived of
444 as more passive authority. There are three sources of power: number of people,
445 social organization, and resources. From that individuals that are the class or
446 group or have the most resources that are in need are those that will have the
447 most power. Resources need not be physical objects they can also be more psy-
448 chological such as skills or knowledge. From history there are many examples
449 where power becomes toxic and the leader becomes the oppressor. Be it Mao
450 Ze Dong, Stalin, Lenin, or Hitler. The question then becomes what causes the
451 powerful to become oppressors? In some cases, those that are in power are trying
452 to do good for the community, restrictive from the example.

453 Recently, issues and abuses of power have become much of the forefront
454 of news due to the explosion caused by the me-too movement [citation]. The me-

455 too movement was first coined by activist and sexual harassment survivor Tarana
456 Burke. A decade after she disclosed her sexual assault, the me-too movement and
457 the abuse of power dominated the new cycle with accusations against film pro-
458 ducer Harvey Weinstein [citation]. Weinstein was known for doing philanthropic
459 initiatives during his career by using his influence and money to aid the certain
460 initiatives that he had chosen. However, soon news of his sexual assault accu-
461 sations and threats became news. Soon multiple women came forward accusing
462 Weinstein of assaulting them as well and using his power over them to intimidate
463 and silence them [citation]. This exemplifies how resources and position aid in
464 individuals become powerful. Weinstein had the resources and the authority to
465 abuse his power with many of his peers knowing what he was doing [citation].

466 In psychology, it was originally conceived that power corrupted individ-
467 uals exemplified by the Stanford prison experiment where “regular” individuals
468 were instructed to play the prison guards of a simulated prison. Similar indi-
469 viduals were instructed to portray the prisoners [citation]. Zimbardo, the lead
470 researcher for the experiment, soon noted that the individuals that portrayed the
471 prison guards became aggressive with the prisoners. They verbally and physically
472 assault them. The experiment was halted to stop any more damage from occur-
473 ring. News spread of the results of the experiment and power was seen as causing
474 or influencing the “prison guards” to become aggressive and abuse towards the
475 “prisoners.” However, the nature of the participants became into question [cita-
476 tion]. Later researchers noted that there could have been a self-selection bias of
477 the participants. The experiment was advertised such that the prison experiment
478 was known to the participant. This would then cause individuals to self-select
479 into the group which could possibly skew the results given that the participants
480 may have had authoritarian tendencies and the experiment and added power
481 may have given the opportunity for the participants to express their authoritar-
482 ian tendencies already present [citation]. Similar explanations have occurred in
483 politics.

484 Throughout political history individuals that have reached powerful posi-
485 tions on multiple occasions have given some powerful people the outlet to express
486 their prejudiced and problematic beliefs [citation]. Fear of communist infiltration
487 in the United States caused many fears and blacklisting was a frequent practice.
488 Joseph McCarthy, a Wisconsin senator, would soon use his power as a legisla-
489 tor/senator [citation]. McCarthy would call individuals to the front of the House
490 Un-American Activities Committee because they were suspected of being spies
491 for the Soviet Union. McCarthy and the committee used strong arm tactics and
492 would often threaten individuals brought in front of the committee. Many in-
493 dividuals brought forward often had their lives irrevocably changed [citation].

494 Soon Senator Margaret Chase Smith and six others condemned McCarthy for his
495 actions and tactics. McCarthy was soon censured, and the House Un-American
496 Activities Committee was disbanded. The political issue of power being used
497 as an outlet for prejudiced and authoritarianism became apparent recently after
498 the 2016 United States Presidential Election [citation]. Donald Trump's political
499 exploits would soon highlight his past and present use of power and his uneth-
500 ical dealings. Often Donald Trump would use his power for personal gain and
501 to express his prejudicial and racist beliefs. Examples range from in the 1990's
502 Donald Trump advocated for the Central Park Five, five African-American men
503 accused of raping and murdering a young White woman in Central Park, to be
504 put to death [citation]. However, DNA evidence exonerated on the men of the
505 crime [citation]. Recently, Donald Trump on the campaign trail accused Mexico
506 of sending individuals across the border that were rapists and drug dealers. How-
507 ever, there was no physical proof of the case and became a common trope used by
508 Donald Trump supporters. Because of the misuse of power and authority, there
509 have been increased hate crimes towards Mexican Americans and African Amer-
510 icans [citation]. The Southern Poverty Law Center, an organization that records
511 the number of hate groups currently active in the United States has documented
512 a clear increase in the number of active hate groups after the 2016 election [cita-
513 tion]. The supporters feel a sense of validation for their own beliefs and opinions
514 which they feel allows them some power in and of itself. This then poses an
515 interesting question in power research in psychology. What are the correlates of
516 the power complex? What are the consequences of power? How does a power
517 imbalance affect relationships? The list of questions is vast and varied.

518 Power imbalances in relationships can have negative effects spanning the
519 entirety of an individual's life, be it emotionally, physically, psychologically, and
520 socially [citation]. Dr. Helene Papanek, director of the Alfred Adler institute, a
521 sub-clinic of the Alfred Adler Mental Hygiene Clinic, discussed at a meeting of
522 the Association of Humanistic Psychology, multiple cases of controlling and power
523 disturbances in personal relationships. A relational example was presented where
524 a father, Mr. A had complete control over his wife and daughter. Controlling
525 when they should be home and where they should go. Mr. A even controlled
526 the frequency and positions of sex (Papanek, 1972). Power-over someone can
527 also manifest feelings of low self-worth and destructive behaviors. For example,
528 Ms. C was a young mother of a child born out of wedlock. She was abandoned
529 by her parents and the father of her child. She was constantly controlled by
530 her mother and their disdain for her child out of wedlock. Soon she developed
531 panic attacks but also a sense of superiority over others as a defense mechanism.
532 Dr. Papanek noted that Ms. C developed and lived a life of spiteful behaviors one

533 after the other.

534 The behaviors of Ms. C and Mr. A are not the only examples of individu-
535 als having power over another person or being subjected to the power over them.
536 Power-over has occurred throughout human history and is ingrained in all cultures
537 [citation]. Institutional power-over is quite common cross-culturally. Contracep-
538 tion and control over one’s own reproductive system is a prescient debate globally
539 [citation]. In 1960 and 1963 Enovid was approved for use in the United States and
540 United Kingdom respectively [citation]. Doses for contraception early on were of-
541 ten high and news of multiple deaths was reported widely. Cases were brought
542 forward to control the use of contraception. The Roman Catholic Church’s stance
543 on hormonal contraception shifted from permission to outlawing anything that
544 would be believed as stopping the ability to propagate [citation]. Interestingly
545 in 1989 researchers working for Pfizer in the United Kingdom were researching a
546 new drug that would aid in treating heart conditions [citations]. The researchers
547 soon discovered sildenafil also could treat erectile dysfunction. Ten years later,
548 sildenafil, brand name Viagra, would be patented and approved for use for the
549 primary treatment for erectile dysfunction [citation]. The same individuals that
550 were trying to reduce the use of female contraception were not trying to do the
551 same for Viagra. The Japanese government and officials had similar attempts
552 to quell the use of female contraception while not doing the same for erectile
553 dysfunction treatments [citation].

554 The Council on Foreign Relations [CFR] a non-profit that specializes in United
555 States and international affairs, conducts an international index on women’s work-
556 place equality by rating each country on factors: accessing institutions, getting a
557 job, going to court, protecting women from violence etc. [citation]. Scores range
558 from 0 to 100 where 100 is near total equality in all areas. Of 189 countries on the
559 list only 9 score over 90% in the ranking. One hundred and thirty-eight score be-
560 low 75 with Yemen having the lowest score of 24.5. Including those that intersect
561 with other minorities have even less power like women of color and trans individ-
562 uals [citation]. Women having less power than their male counterparts can have
563 multiple negative outcomes such as continued and sustained sexual aggression,
564 low self-esteem, financial insecurity, lack of freedom of movement, lack of freedom
565 of thought, and in some extreme cases even death [citations]. Cultural relativism
566 creates a difficulty in cultures that have opposing views on the rights and how to
567 navigate that can in and of itself reflect institutional power imbalances.

568 Power imbalances can create a dissociative state where those with less
569 power are seen as more of an object than a person (Gwinn et al., 2013; Haslam &
570 Loughnan, 2014; Lammers & Stapel, 2011; Smith, 2016). While others with more
571 power may see those with less as be less human, some individuals attribute the

dehumanization to themselves as well and self-dehumanize (Bastian et al., 2013; Bastian et al., 2012; Bastian & Haslam, 2010; Kouchaki et al., 2018). Effects of prolonged dehumanization by those with more power often, unchecked and under constant pressure, can lead some individuals to believe what the powerholders say is true. The question remains, why do people in power begin to dehumanize those with less power? Commonly when an individual harms another usually there is some perspective taking by the harmer. However, to dehumanize the other person it lessens the sense of empathy that one would normally feel thus allowing for more damage and harm to be committed [citations]. “With great power comes great responsibility” often quoted by Uncle Ben in the Spider-Man comic books, yet has its possible historical foundations in the French National Convention in 1793, leads credence to the wane and flow of the effects of power (Nationale (Paris), 1793). Those in power make decisions for those for which they are leaders. As is the case with every decision there is a reaction to the decision. Sometimes those effects are negative and those with less power may be harmed in the process. Dehumanization of those in less power acts as a defense mechanism to continue making life changing decisions.

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

1.5 Cognition

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

609 use those memories in making future decisions.

610 The first step at acquiring new knowledge is interacting with the environ-
611 ment. One explanation that has been garnering more cognitive and biological
612 attention is from Dr. Nelson Cowan’s integrated working memory model (Cowan,
613 1999). In the integrated working memory model there are four key areas in at-
614 taining new information: [1] a brief sensory store, [2] a long term store, [3] the
615 focus of attention, [4] and the central executive. Each key area has a separate
616 function[s] that allows for new information to be “judged” against the existing
617 information. The information that is then held temporarily in a sensory store
618 to where it is then sent to the long term store to be “directed” by the central
619 executive which is a metacognitive process that controls and directs where atten-
620 tion should be placed on the incoming information. There is then a controlled
621 more conscious action or an automatic action based on the type of incoming in-
622 formation. Information that is automatic usually is considered habituated to the
623 memory system and is therefore not a novel stimulus. More focus is given to
624 information/stimuli that is more novel. In the integrated working memory model
625 information that is incoming in the brain is often “filtered” through a lens that
626 is understandable to the individual, novel stimuli. From here the information is
627 then encoded and stored in long-term memory for reactivation by new stimuli.

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

639 Common to research in metacognition and moral reasoning is theory of
640 mind. A theory of mind is the ability for an individual to attribute or recognize
641 the inner workings of the mind and differentiate those from the self and others
642 [citation]. Research in theory of mind has contributed to our understanding of
643 autism, schizophrenia, and traumatic brain injury (Byom & Mutlu, 2013). An
644 individual with deficits of theory of mind would for example be unable to attribute
645 signs of happiness on other people, such as a smile or a frown [citation]. In the
646 case of Johnathan, if they had a theory of mind deficits, they would be unable or
647 have difficulty in noticing the dissatisfaction of their joke. Research using theory

648 of mind to investigate social situations such as the example with Jonathan helps
649 psychologists get a better understanding of how moral judgement works and is
650 affected by deficits in the cognitive system.

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

659 The prior knowledge that individuals have can have a negative effect on
660 their ability to gain and hold new information. Those with lower prior knowledge
661 of a given technology often have difficulty in reconstructing the information of a
662 new product compared to those that have less prior knowledge [Wood & Lynch,
663 2002]. When people are presented with new information, a new technology, en-
664 coding of the new information takes place. As that occurs, prior information of
665 the technology is retrieved, and an inference is made on subsequent information
666 by comparing the new and old information. This affects the ability to encode the
667 new information “correctly” and can disrupt later retrieval of the former. Similar
668 effects are seen when investigating motivational forces. Individuals with prior
669 knowledge may also have an overconfidence of the information that they already
670 have and are not as motivated to attend to the information they are learning.

671 Extending the research on prior knowledge and new technology, prior
672 knowledge and complacency has also been seen with contracting an STI, a virus,
673 or chances of getting pregnant [citations]. The decisional factors that occur cog-
674 nitively to choose safe sex practices is complex and subject to frequent change.
675 Many people that are confronted with decisions, such as the mundane choice of
676 what shoes to wear, base their decisions from using a variety of cognitive methods.
677 Often, the choice to wear a condom or other safe sex practices is through a risk
678 heuristic of contracting or transmitting a sexually transmitted infection. With
679 decisions based on issues of purity, such as sex, one heuristic that is commonly
680 employed is the affect heuristic. The affect heuristic in judgements of risk is where
681 the thought or priming of a specific word triggers a quick emotional response to
682 that stimuli word (Finucane et al., 2000). When presented with words that are
683 physically harmful such as cigarettes or pesticides, participants rated the words
684 as too risky and reported negative feelings concerning those stimulus words. Af-
685 fective considerations of high-risk situations are often put into perspective with
686 individuals in risky situations.

687 An artifact of how issues such as HIV, Human Immunodeficiency Virus,
688 discussed in the media and the community that it affects creates a cognitive
689 problem with individuals judging the likelihood of catching the virus, especially
690 women. In the media it is often discussed how men who have sex with men
691 are the main individuals catching and spreading HIV. While HIV still affects the
692 LGBTQ+ community, the discussion around susceptibility affects other individu-
693 als outside of the LGBTQ+ community negatively as well. Women, for example,
694 have a genetically higher susceptibility to the virus [citation]. That being so,
695 often due to unintended ignorance to their chances are one of the leading groups
696 contracting new cases of HIV [citation]. Downlow culture as well increases the
697 chances of contracting the virus. Amongst some men that do not wish to ac-
698 knowledge their own homosexuality will choose to forgo the condom, implies a
699 premeditation, and do not necessarily believe they will contract the virus [cita-
700 tion]. Both examples are contributed by the representation of HIV in the media
701 and the current zeitgeist.

702 Common in all decisions is the difficulty and uncomfortability between
703 different decisions and opposing situations, is cognitive dissonance (Festinger,
704 1957). An interesting cognitive dissonant series of thoughts that some males
705 have is when choosing to wear a condom. Often, there will be the cognition of not
706 wanting to contract an STI, but also believing that condoms are uncomfortable
707 (MacPhail & Campbell, 2001). In addition to believing they are uncomfortable
708 there is an interesting cultural belief amongst some young men that wearing a
709 condom makes them less of a man (Pleck et al., 1993; Vincent et al., 2016). To
710 some the main decisional factor in whether to wear a condom is not contracting an
711 STI or getting pregnant [citation]. While, as noted with perceptions on condoms,
712 often comfort and how others will see them is the main factor. Sexually active
713 or those thinking to become sexually active often get their opinions on sexual
714 activity and safety practices from their peers. Often, the opinions of peers are
715 more influential than those of the parent[s]. Interestingly, some men believe that
716 due to the cultural cognition around contraception, discussions and decisions of
717 contraception is a female decision (Castro-Vázquez, 2000).

718 **1.5.1 Aggression and Cognition**

719 Connected to spitefulness, moral judgment, and cognition is human ag-
720 gression. Traditionally, aggression is differentiated between the outcome or moti-
721 vation of the incident. Aggression as it is operationally defined is behavior that is
722 committed by the actor to another with the intent to harm the other (Anderson
723 & Bushman, 2002). This is then further differentiated to violence where violence
724 is the intent to cause severe harm such as death. From aggression research and

725 moral judgment, cognitive neoassociation theory [CNT] was beginning to become
726 tantamount in research on aggressive behavior.

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

746 Scripts and schemata are key components of the GAM. Schema, more
747 broadly than sexual schema, are cognitive compositions or structures that repre-
748 sent objects or ideas interconnected by their features (DiMaggio, 1997). Multiple
749 representations of schema and stereotypical event sequences are labelled as scripts
750 (Abelson, 1981). A classic example of a cognitive script is events surrounding
751 reading the menu at a restaurant (Abelson, 1981). An individual is at a restau-
752 rant and needs to order from the menu. However, they lost their reading glasses.
753 As Abelson contends, the reader must infer what is needed in reading a menu,
754 what occurs at a restaurant, and so on. The automatic process of schematic
755 activation begins with certain key features of an object or event being noticed
756 by the individual. For example, recognizing a tree one of the first features that
757 are noticed that distinguishes a tree are the leaves. From the leaves, the bark is
758 activated, and so on making up the concept of a tree.

759 Often aggression and discrimination can be understood through the
760 schematic model. Media and social representations of individuals, especially men
761 of color, have often made assumptions and portrayed them as violent and crim-
762 inals. Currently a majority of US adults in a recent Pew Research Center poll
763 report that race relations are currently worse, Black Americans and people of

764 color in general report more cases of discrimination, and a majority say Black
765 Americans in particular are treated unfairly by the police (Pew Research Center,
766 2019). Aggression or discrimination is often the result of associating one group
767 with negative connotations. For example, in the case of those that believe Black
768 Americans are criminals they have through cognitive associations have related
769 the schematic concept of criminal with the features/schema of what they believe
770 is a Black American. The discrimination and aggression then occur through the
771 GAM processes with negative actions being the outcome.

772 Pertinent after the advent of the me-too movement, see section 3, issues of
773 how these power over views of women, especially women of color and trans women
774 of color, become learned and develop in sexual aggression. Sexual aggression in
775 and of itself is a subgroup of aggression where the intent to harm is sexual in
776 nature (Anderson & Bushman, 2002; **malamuth1995?**). Many of the targets
777 of sexual aggression are women of color and trans women of color [citations].
778 In the reported cases men are often the perpetrators of the crimes (Anderson
779 & Bushman, 2002). The aggression itself appears to be domain specific to one
780 gender, women. Often, acts of sexual aggression are verbal in nature, such as
781 asking repeatedly for sex or threatening to break up with them (Testa et al.,
782 2015). When individuals gain power they may aggress more over those that
783 have less power, which may pay head to the continued sexual aggression and
784 sexual violence against women of color and trans women of color for whom have
785 historically low levels of power [citations].

786 Recent research by Garnett and Mann investigate the cognitive and em-
787 pathetical processes of those that commit a sexual aggression or sexual violence,
788 labelled as sexual offending (2013). Common to research on sexual offenses, re-
789 search contends that those that do offend do so with a lack of empathy towards
790 their victims (**hudson1993?**). As noted in the previous section on moral judg-
791 ment, see section 3, empathetic processing by these offenders are more complex
792 than the simple inability to “feel” or identify the emotions of others. There is a
793 recurring theme amongst offenders of women being deceitful and sexually entitled
794 (Barnett & Mann, 2013; Gannon, 2009). The offenders often feel slighted when
795 a woman denies their sexual advances which then tends to lead to some sexual
796 aggression (Gannon, 2009; Williams et al., 2017).

797 The rejection of the sexual advances of the man often damage their sense
798 of masculinity (Malamuth et al., 1996). Relating back to beliefs on condom
799 use amongst men, even the request of wearing condom could be interpreted as
800 damaging their sense of masculinity (Castro-Vázquez, 2000). If the woman, in
801 a heterosexual relationship, brings the condom they are damaging the males
802 masculinity but if the male brings the condom he could also be considered a

803 thoughtful individual. While the woman would be seen as easy. This could
804 then lead to bullying behavior and ostracization from the moral judgment of the
805 community on the woman's purity, see section moral judgment.

807 **2.1 Exploratory Experiment 1**808 **2.2 Experiment 1 Review**

809 Spitefulness or spiteful behavior is another aspect of an individual com-
 810 mitting a wrong against another person or person. Spitefulness or spite was orig-
 811 inally defined as, “behaviors that have negative consequences for both the actor
 812 and the recipient” by evolutionary biologists in research in the animal kingdom
 813 (D. K. Marcus et al., 2014) . Psychoanalysts would soon define spitefulness as,
 814 “instances in which people harm themselves to punish another. . .” (Critchfield et
 815 al., 2008). Investigations into the origins of spiteful behaviors have been varied:
 816 evolutionary psychological, behavior economic, and parental attachment [cita-
 817 tions]. Spiteful behavior would be a problematic behavior that in theory should
 818 not subsist through consecutive generations. However, spite is seen throughout
 819 the animal kingdom. From the bacteria to birds and humans, with obvious vari-
 820 ations [citations]. Hamilton’s seminal paper on altruism in the animal was soon
 821 changed by research on spiteful behaviors (1970). Hamiltonian spite articulates
 822 the continued existence of spite in spite of the ultimate cost in that it is genet-
 823 ically advantageous and more common for there to be spiteful behavior towards
 824 the least similar of peers than the average relatedness to the group. In this sense,
 825 spite continues to exist, according to Hamiltonian spite, because the choice of the
 826 least similar amongst the average ultimately increases adaptivity. Interestingly,
 827 Hamilton contended that if the cost to the individual is less than both or either
 828 the benefit or the genetic relatedness than altruistic behavior is favored (Gardner
 829 & West, 2004; Hamilton, 1970). Conversely and more important to spitefulness is
 830 that spitefulness may be favored if there is enough negative relatedness between
 831 the two individuals (originally hypothesized in relation to animals).

832 Spitefulness is also often misconstrued with selfishness (Smead & Forber,
 833 2013). The difference is the cost applied to the individual. To demonstrate the
 834 differences, Alex and Cody are driving down the highway. Alex drives in front
 835 and cuts off Cody from their mutual exit. There is no cost applied to Alex when
 836 cutting off Cody. However, if Alex was in front of Cody and pushed on the brakes
 837 to stop Cody from getting too close and tailgating, then both cars are damaged.
 838 In the latter, Alex damages both cars therefore inflicting damage on themselves,
 839 which exemplifies a spiteful act.

840 Researchers further parse spitefulness into either genetic or psychological
 841 spite. Genetic spite would be the explanation of the spiteful behaviors based on
 842 the genetic relatedness, the aforementioned, while psychological spite is a risky

843 behavior where the organism is required to perform a cost benefit analysis along
844 with analyzing possible futures (Hauser et al., 2009). Note: for brevity, future
845 discussions of spite for humans will be exclusive to psychological spite.

846 Early examples of genetic spitefulness were demonstrated in bacteria where
847 a bacterium will burst spreading bacteriocins, antibacterial toxins, killing the
848 competitor bacteria (Gardner & West, 2006). In more complex life, some male
849 birds kill the young conspecific chicks without eating them (Barnett & Mann,
850 2013). It would not be advantageous for the species if the amount of young
851 were significantly reduced, which then would reduce the fitness of the male bird.
852 Similar yet not as drastic spiteful behavior has been seen in humans. Com-
853 mon examples are in ultimatum games where participants are asked to distribute
854 funds to other participants. Participants that believed that the funds were being
855 unequally distributed out, they would reject the offer (D. K. Marcus et al., 2014).

856 Outside of behavioral economics, spitefulness has been seen when people
857 will intentionally take longer in checkout if they are annoyed by the person be-
858 hind them or taking longer on an exam if the person is in some way annoyed by
859 the instructor. Spite has also been seen in preschoolers in experiments like the
860 ultimatum game with adults (Bauer et al., 2014). In similar research children
861 preschool children half of the time would reduce the amount of payoff of another
862 child even when there would be no reduction in their winnings (Bügelmayer &
863 Katharina Spiess, 2014). On average, boys tended to choose the more spiteful
864 choice over the non-spiteful, girls did not show a significant propensity for spite-
865 ful behavior. This propensity continues where younger men tend to score the
866 highest on spitefulness than their peers (D. K. Marcus et al., 2014). As people
867 age, they tend to be less spiteful and egalitarian and altruistic behaviors increase
868 (Bügelmayer & Katharina Spiess, 2014). Spiteful behavior may persist into early
869 and late adulthood.

870 The evolution of spite in humans continues to be researched but another research
871 finding points to parenting style. Parenting style includes parental warmth, pos-
872 itive affect, and control [Carlo et al. (2011); citations]. Research investigating
873 positive parental connections has shown to predict future secure attachments in
874 relationships and helps foster multiple types of prosocial behaviors and a general
875 emotional sensitivity [citations]. Conversely, a negative parenting style evidenced
876 by low parental warmth and more strict control over the child predicts more anti-
877 social behaviors and future insecure attachments [citations]. Both paternal and
878 maternal warmth was predictive of future prosocial behaviors however, maternal
879 warmth was more predictive than paternal warmth. When there are negative
880 parental attachments, negative traits are predicted to occur. For example, dark
881 personality traits are more likely. These dark personalities were originally a triad

882 of psychopathy, narcissism, and Machiavellianism [citations]. Eventually the triad
883 expanded to include both sadism and spitefulness [citation]. Likelihood for spite-
884 fulness to subsist later into life is also reflected by the education level of the
885 parents, where children of less-educated parents tended to be more selfish, less
886 altruistic, and express a weak form of spitefulness (Bauer et al., 2014). Lower
887 socioeconomic status has also been associated with deficiencies in cooperating
888 behaviors that reduce the likelihood of darker personality traits like spitefulness.
889 However, Bauer and colleagues suggest that it may be the circumstances of having
890 a lower economic status that makes it more difficult to form altruistic behaviors in
891 that there are other factors for them to think of. Still, spiteful behavior remains
892 a factor for children in families with low socioeconomic status.

893 Some adults have a comorbidity with spitefulness and other aggressive per-
894 sonality traits. Investigations of violent offenders have shown interesting effects of
895 spitefulness amongst the other darker characteristics (Rogier et al., 2019). Violent
896 offenders compared to their non-incarcerated controls, displayed increased aggres-
897 sion, narcissism, and spitefulness. Individuals that displayed increased spiteful
898 behavior was due to the need to punish others through external means with-
899 out internal control of their behaviors. The spitefulness displayed by the violent
900 offenders also saw an association with difficulty in emotional dysregulation [Ci-
901 tations]. Emotional dysregulation is when an individual has difficulty in either
902 regulating their emotion responses and/or emotional miss regulation where the
903 individual is using the incorrect regulatory strategy in response to the current
904 situation [Gross & Jazaieri, 2014]. In studies investigating the individuals show-
905 ing instances of spiteful behavior, they may have difficulty in controlling their
906 emotions along with using the incorrect regulatory strategy. Spiteful individuals
907 not only have issues in regulating their emotions, they also have difficulty in rec-
908 ognizing and attributing the emotions of others often misconstruing the causes of
909 the emotions. Furthermore, the spiteful individuals have difficulty with impulse
910 control and coupled with their misconstruing of the emotions of others they may
911 harm the other individual(s) and in turn themselves. Coupled with difficulties in
912 emotion detection, they display increased levels of detachment which may explain
913 their willingness to harm others (Zeigler-Hill & Vonk, 2015). These spiteful indi-
914 viduals also have issues with future prospection, which is the ability to judge the
915 consequences of their behaviors and project them into the future [citations]. In
916 doing so they may show irrational behaviors towards themselves and thus harm-
917 ing themselves, the central precept in spitefulness.

918 There are several problematic behaviors that become prevalent with individuals
919 that show spitefulness [citations]. Given the readily available high-speed internet,
920 many behaviors are becoming fueled by increased internet use [citations]. In some

cases, the internet use may become problematic and affect the individual negatively. Kicaburun and Griffiths carried out a series of studies investigating the association between the dark traits or personalities and problematic internet use. Of note, each of the dark quintet traits are associated with problematic internet use. Specifically, Machiavellianism is directly associated with online gambling and online gaming. Spitefulness interestingly was directly associated with internet gaming use and indirectly with online shopping (Kircaburun & Griffiths, 2018). Enviousness and feelings of entitlement are leading motivations of spiteful behavior (D. K. Marcus et al., 2014). Consequently, individuals high in spitefulness also tend to be higher in both narcissism and low self-esteem which worsens the problematic internet use. Another problematic behavior, which may be facilitated by increased internet use, is not physical spiteful behavior. Research in humor styles has shown two variations, either injurious or benign (Vrabel et al., 2017). Injurious as the name suggests uses humor that is aggressive that belittles themselves and others. Conversely, benign humor is more affiliative and enhances feelings of the self and others. With the increased internet use by individuals that score higher in spitefulness it stands to reason that these individuals would use the internet to further their use of belittling humor styles to harm others possibly expanding their pool of eventual targets.

2.3 Methodology

2.3.0.1 Methods. Participants: Participants were a convenience sample of 82 ($M = 25.6$, $SD = 7.54$) individuals from Prolific Academic crowdsourcing platform (“www.prolific.co”). Requirements for participation were: (1) be 18 years of age or older and (2) and as part of Prolific Academics policy, have a prolific rating of 90 or above. Participants received £4 or £8 an hour as compensation for completing the survey. The University of Edinburgh’s Research Ethics Committee approved all study procedures (approval reference number: 330-1920/1).

2.3.0.2 Materials: *Demographic Questionnaire:* Prior to the psychometric scales, participants are asked to share their demographic characteristics.

Spitefulness Scale: The Spitefulness scale (D. K. Marcus et al., 2014) is a measure with seventeen one sentence vignettes to assess the spitefulness of participants. The original spitefulness scale has 31-items. In the original Marcus and colleagues’ paper, fifteen were removed. For the present study however, 4-items were removed because they did not meet the parameters for the study i.e., needed to be dyadic, more personal. Three reverse scored items from the original thirty-one were added after meeting the requirements. Example questions

959 included, “It might be worth risking my reputation in order to spread gossip about
960 someone I did not like.” and “Part of me enjoys seeing the people I do not like fail
961 even if their failure hurts me in some way.” Items are scored on a 5-point scale
962 ranging from 1 (“Strongly disagree”) to 5 (“Strongly agree”). Higher spitefulness
963 scores represent higher acceptance of spiteful attitudes.

964 *Sexuality Self-Esteem Subscale:* The Sexuality Self-Esteem subscale
965 (SSES; Snell and Papini (1989)) is a subset of the Sexuality scale that mea-
966 sures the overall self-esteem of participants. Due to the nature of the study, the
967 sexuality subscale was chosen from the overall 30-item scale. The 10-items cho-
968 sen reflected questions on the sexual esteem of participants on a 5-point scale
969 of +2 (Agree) and -2 (Disagree). For ease of online use the scale was changed
970 to 1 (“Disagree”) and 5 (“Agree”), data analysis will follow the sexuality scale
971 scoring procedure. Example questions are, “I am a good sexual partner,” and “I
972 sometimes have doubts about my sexual competence.” Higher scores indicate a
973 higher acceptance of high self-esteem statements.

974 *Sexual Jealousy Subscale:* The Sexual Jealousy subscale (Worley & Samp,
975 2014) are 3-items from the 12-item Jealousy scale. The overall jealousy scale
976 measures jealousy in friendships ranging from sexual to companionship. The 3-
977 items are “I would worry about my partner being sexually unfaithful to me.”,
978 “I would suspect there is something going on sexually between my partner and
979 their friend.”, and “I would suspect sexual attraction between my partner and
980 their friend.” The items are scored on a 5-point scale ranging from 1 (“Strongly
981 disagree”) to 5 (“Strongly agree”). Higher scores indicate a tendency to be more
982 sexually jealous.

983 *Sexual Relationship Power Scale:* The Sexual Relationship Power Scale
984 (SRPS; Pulerwitz et al. (2000)) is a 23-item scale that measures the overall
985 power distribution in a sexually active relationship. The SRPS is split into the
986 Relationship Control Factor/Subscale (RCF) and the Decision-Making Domi-
987 nance Factor/Subscale (DMDF). The RCF measures the relationship between
988 the partners on their agreement with statements such as, “If I asked my partner
989 to use a condom, he [they] would get violent.”, and “I feel trapped or stuck in
990 our relationship.” Items from the RCF are scored on a 4-point scale ranging from
991 1 (“Strongly agree”) to 4 (“Strongly disagree”). Lower scores indicate an imbal-
992 ance in the relationship where the participant indicates they believe they have
993 less control in the relationship.

994 The DMDF measures the dominance level of sexual and social decisions in
995 the relationship. Example questions include, “Who usually has more say about
996 whether you have sex?”, and “Who usually has more say about when you talk
997 about serious things?” Items on the DMDF are scored on a 3-item scale of 1

998 (“Your Partner”), 2 (“Both of You Equally”), and 3 (“You”). Higher scores
999 indicate more dominance by the participant in the relationship.

1000 *Scenario Realism Question:* Following Worley and Samp in their 2014
1001 paper on using vignettes/scenarios in psychological studies, a question asking the
1002 participant how realistic or how much they can visualize the scenario is. The
1003 1-item question is “This type of situation is realistic.” The item is scored on a 5-
1004 point scale of the participants agreement with the above statement, 1 (“Strongly
1005 agree”) to 5 (“Strongly disagree”). Higher scores indicate disagreement with the
1006 statement and reflects the belief that the scenario is not realistic.

1007 *Spiteful Vignettes:* After participants complete the above scales, they are
1008 presented with 10-hypothetical vignettes. Each vignette was written to reflect a
1009 dyadic or triadic relationship with androgynous names to control for gender. Five
1010 vignettes have a sexual component while five are sexually neutral. An example
1011 vignette is, “Casey and Cole have been dating for 6 years. A year ago, they
1012 both moved into a new flat together just outside of the city. Casey had an affair
1013 with Cole’s best-friend. Casey had recently found out that they had an STI that
1014 they had gotten from Cole’s best-friend. Casey and Cole had sex and later Cole
1015 found out they had an STI.” For each vignette, the participant is asked to rate
1016 each vignette on how justified they believe the primary individual, Casey in the
1017 above, is with their spiteful reaction. Scoring ranges from 1 (“Not justified at
1018 all”) to 5 (“Being very justified”). Higher scores overall indicate higher agreement
1019 with spiteful behaviors. ## Procedure: Participants were recruited on Prolific
1020 Academic. Participants must be 18-years of age or older, restriction by study
1021 design and Prolific Academic’s user policy. The published study is titled, “Moral
1022 Choice and Behavior.” The study description follows the participant information
1023 sheet including participant compensation. Participants were asked to accept their
1024 participation in the study. Participants were then automatically sent to the main
1025 survey (Qualtrics, Inc.).

1026 Once participants accessed the main survey, they were presented with the
1027 consent form for which to accept they responded with selecting “Yes.”. Partic-
1028 ipants were then asked to provide demographic characteristics such as gender,
1029 ethnicity, and educational attainment. Participants would then complete in or-
1030 der, the spitefulness scale, the sexual relationship power scale, the sexual jealousy
1031 subscale, and sexuality self-esteem subscale. Next, participants were presented
1032 ten vignettes where they were instructed to rate on the level of justification for
1033 the action conducted in the vignette. After each vignette, participants would rate
1034 the realism of the scenario. Upon completion of the survey (median completion
1035 time 17 minutes and 5 seconds), participants were shown a debriefing message
1036 and contact information of the Primary Investigator (Andrew Ithurburn). Par-

1037 ticipants were then compensated at £8/hr. via Prolific Academic.

1038 **2.3.0.3 Data Analysis:** Demographic characteristics were analyzed
1039 using a one-way analysis for continuous variables (age) and Chi-squares tests for
1040 categorical variables (sex, ethnicity, ethnic origin, and educational attainment).
1041 Means and standard deviations were calculated for the surveys along with correla-
1042 tional analyses (e.g., spitefulness, SESS, SRPS, SJS). Bayesian multilevel models
1043 were used to test differences between levels of justifications of vignettes that are
1044 either sexually or non-sexually vindictive in behavior. Model 1 ## Results: Table
1045 # presents the results of the multilevel model of the present study. Ninety-seven
1046 individuals attempted to participate in the study, 15 of these individuals opted
1047 to return the study and discontinue participation. A majority of the partici-
1048 pants identified as male ($n = 50$) while 30 identified as female and 2 as gender
1049 non-binary. There was a moderate skewness towards the right in age (1.40). Ta-
1050 ble # shows the demographic information for study 1. A Spearman correlation
1051 was conducted on the four psychometric tests along with the age of the partic-
1052 ipants. The sexual jealousy subscale (SJS) and the sexual relationship power
1053 scale (SRPS) resulted in the only significant correlation $r = -0.55$, $p < 0.0001$.
1054 ### Spitefulness: Justification as a function of the four indices was not entirely
1055 explained by the proposed model. The posterior mode for the fixed effect of Spite
1056 $\gamma = 0.02$. 95% CI [0.01-0.03], indicating that there was an insignificant difference
1057 between the levels of spite and justification of vindictive behaviors. When looking
1058 at percentage change of behavior given the γ , around 2%. The mode of the pos-
1059 terior distribution for the variance among the random effects for the justification
1060 of the vignettes was $\alpha^2 = 1.07$, 95% CI [0.98 – 1.09] indicating that there was
1061 variation amongst the participants in their justification of the vignettes.

1062 2.4 Discussion:

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