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

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Introduction

Every day individuals make decisions be they mundane such as which cereal to eat in the morning to the more complex of which job should they accept. The consequences for making those decisions can be equally complex. Some decisions are more difficult to quantify and understand while others can be relatively easy like choosing what cereal to eat in the morning. However, some are increasingly more difficult to statistically model. For example, two adult males (or a man and a woman) who are intending to have sex must decide whether to have sex with or without a condom. The consequences can have lasting effects depending on what the couple chooses (General risk: Kusev et al., 2017; Sexual Risk: Desiderato & Crawford, 1995; Risky Decisions: van Kleef et al., 2021).

Spitefulness

These lasting effects can be twofold. For example, deciding not to wear a condom could result in an unplanned pregnancy or exposing one or another person to a sexually transmitted infection. Behaviors/decisions that have negative consequences for both individuals is the original understanding of spite to where psychologically spite is understood as intentionally harming oneself to punish another (Critchfield et al., 2008; Marcus et al., 2014). Spiteful behavior has often been overlooked in psychological research. Spite has been seen in behavioral economic experiments, preschoolers with ultimatum games, and daily life (Bauer et al., 2014; Bügelmayer & Katharina Spiess, 2014; Marcus et al., 2014). Preschool boys tended to be more spiteful than their female counterparts. Younger men followed suit and tended to be more spiteful than their counterparts (Marcus et al., 2014). Age plays a role where as people age, they tend to be less spiteful and more egalitarian (Bügelmayer & Katharina Spiess, 2014).

Narcissism

Often accompanying negative ## DoPL

Research in power desire motives has focused on three sub-domains: dominance, leadership, and prestige (Suessenbach et al., 2019). Each of these three different power motives is explained as to different ways or methods that individuals in power sought power or were bestowed upon them.

Dominance

The dominance motive is one of the more researched methods and well depicted power motives. Individuals with a dominant orientation display the more primal of human behavior. These individuals will seek power through direct methods such as asserting dominance, control over resources, or physically assaulting someone [Johnson et al. (2012); Winter (1993);]. Early research in dominance motives has shown that acts of dominance ranging from asserting physical dominance over another to physical displays of violence has been shown in many mammalian species, including humans (Petersen et al., 2018; Witkower et al., 2020).

Individuals high in dominance are often high in Machiavellianism, narcissism, and often are prone to risky behavior (discussion further in the next section). Continued research has hinted at a possible tendency for males to display these dominant seeking traits more than females (Suessenbach et al., 2019) When high dominance individuals assert themselves they are doing so to increase their own individual sense of power (Williams et al., 2017). Asserting ones own sense of dominance over another can be a dangerous task. In the animal kingdom it can often lead to injury. While, in humans asserting dominance can take a multitude of actions such as leering behaviors, physical distance, or other

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non-verbal methods to display dominance (Witkower et al., 2020). Power from a dominant perspective is often never bestowed upon someone. Often, high dominance individuals will take control and hold onto it.

Prestige

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

Apart from dominance-motivated individuals that continually have to fight for their right to have power over others, individuals that seek or were given power through a prestige motivation are not generally challenged in the same sense as dominant individuals. Displaying behaviors that the community would see as beneficial would endear them into the community making the survival of the community as a whole better (Barkow et al., 1975). Evolutionarily this would increase the viability of the prestigious individual and their genes. Similar to the dominance perspective, the prestige perspective overall increases the power and future survivability of the individual. However, due to the natural difference between prestige and dominance, dominance-seeking individuals are challenged more often resulting in more danger to their position (Lewis, 2002).

Leadership

Apart from dominance and prestige, leadership raises some interesting questions on deference and why individuals would defer to others in power. Psychologically, leadership is the deference to authority and working together towards a shared common goal (Van Vugt, 2006). Research in animal behavior contends that leadership is a uniquely human trait due to the complexity of the human brain along with the ever-growing size of social groups (King et al., 2009).

Early human societies began to use cooperation strategies such as leadership and individuals taking leadership roles in order to accomplish a common task. Similar non-human primates developed similar tactics however as aforementioned, traits unique to humans allowed for more complex interactions in leadership furthering the differences. Unique to leadership apart from dominance and prestige orientation is the method of power control in a leadership dynamic system.

The Present Experiment

The present experiments sought to investigate a possible relationship between spitefulness and risky sexual behaviors. As with past experiments in moral judgment and decision-making, vignettes were used to create situations of interest. The present study comprises two experiments and a pilot study (pilot study data and results included in supplemental materials).

The pilot study sought to test out our materials and understanding of the literature. Statistical analyses followed the hypotheses laid out on our preregistration (https://osf.io/jz6qb). Experiment one sought to build on the pilot study and refine the materials used. Specifically the vignettes of the experiment. Experiment two then furthered our understanding and investigates spitefulness possible connection to dominance, prestige, and leadership orientation with risky sexual decision-making (https://osf.io/5q84z).

Based on the literature we predicted that individuals high in spitefulness would endorse spiteful actions and behaviors by rating such actions as justified. Furthermore, we predicted based on the literature that individuals high in dominance orientation would be more likely to justify spiteful behaviors with sexually spiteful behaviors being more dominant. These experiments seek to further our understanding of human behavior in the face of risky sexual/nonsexual decisions. These experiments were approved by the University of Edinburgh Psychology Research Ethics Committee (Approval Numbers 330-1920/1, 330-1920/2, 330-1920/3).

Experiment One

Method

Participants

Participants were a convenience sample of 92 (Mage = 26.14, SD = 8.69) 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. Table 1 shows the demographic information for experiment one.

Demographic Questionnaire

Prior to the psychometric scales, participants are asked to share their demographic characteristics (e.g., age, gender, ethnicity, ethnic origin, and educational attainment).

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). Internal consistency reliability for the current sample is $\alpha = 0.85$.

Spitefulness Scale

The Spitefulness scale (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 included, "It might be worth risking my reputation in order to spread gossip about someone I did not like," and "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 $\alpha = 0.84$.

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 $\alpha = 0.95$.

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 $\alpha = 0.72$.

Sexual Relationship Power Scale

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

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

Scenario Realism Question

Following Worley and Samp in their 2014 paper on using vignettes/scenarios in psychological studies, a question asking the participant how realistic or how much they can visualize the scenario is. The 1-item question is "This type of situation is realistic." The item is scored on a 5-point scale with how much the the participant's agreed with the above statement, 1 ("Strongly agree") to 5 ("Strongly disagree"). Higher scores indicate disagreement with the statement and reflect the belief that the scenario is not realistic.

Spiteful Vignettes

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

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

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

Procedure

Participants were recruited on Prolific Academic. Participants must be 18-years of age or older, restriction by study design and Prolific Academic's user policy. The published study is titled, "Moral Choice and Behavior". The study description follows the participant information sheet including participant compensation. Participants were asked to accept their participation in the study. Participants were then automatically sent to the main survey (Qualtrics, Inc.).

Once participants accessed the main survey, they were presented with the consent form for which to accept they responded by selecting "Yes". Participants were then asked to provide demographic characteristics such as gender, ethnicity, 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.

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.

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%)

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.

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, Min-max = [16 - 57]). Justification as a function of the four indices was moderately explained by the model

Table 2

Bayesian Correlation with 95% Crediblility 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

(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 Sexual 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.

Limitations and Future Directions

Experiment 2

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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