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To cite this article: Phoenix R. Crane & Molly E. Ireland (2022): Dominants, Submissives, and Bottom-up Text Analysis: Exploring BDSM Roles Through Romantic and Erotic Narratives, The Journal of Sex Research, DOI: [10.1080/00224499.2022.2111400](https://doi.org/10.1080/00224499.2022.2111400)


To link to this article: <https://doi.org/10.1080/00224499.2022.2111400>

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## Dominants, Submissives, and Bottom-up Text Analysis: Exploring BDSM Roles Through Romantic and Erotic Narratives

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### ABSTRACT

Powerplay, or the consensual power exchange between “Dominant” and “submissive” (D/s) role partners, is common practice within BDSM culture. To many BDSM practitioners, their D/s role is an integral part of their sexual identity, informing not only their sexual scripts but also their non-sexual social interactions. Linguistic Inquiry and Word Count (LIWC) text analysis software was used to process 261 participants’ responses to prompts asking them to write erotic and relationship-themed narratives. Using a data-driven approach to model selection, we regressed participants’ engagement in BDSM and D/s powerplay role identification on standardized language frequencies. Stories from more active BDSM practitioners’ narratives used more perceptual words, suggesting potentially mindful, intimate, and detailed storytelling, whereas non-practitioners used more tentativeness and death in their writings. Moreover, language reflected D/s role attributes, with Dominants exhibiting ownership, responsibility, and other-focus, and submissives referencing power dynamics and self-focus in their responses. Findings are consistent with existing literature on BDSM power relationships and relate to psychosexual well-being.

BDSM (bondage/discipline, dominance/submission, and sadism/masochism) has become more salient, particularly in American culture, within the last two decades. As more people become aware of BDSM practices, more individuals are experimenting with sexual behaviors and identities related to bondage and erotic power differences (Leistner & Mark, 2016; Vivid et al., 2020). Despite its growing relevance, the thoughts, behaviors, and romantic narratives of individuals who identify as BDSM practitioners have yet to be systematically studied. Even less is known about BDSM powerplay<sup>1</sup> identification among Dominant (D) and submissive (s) roles.<sup>2</sup> To expand extant knowledge of BDSM practitioners, we used dictionary-based text analysis to explore the linguistic cues associated with self-reported BDSM activity as well as Dominant and submissive role identification.


BDSM is a form of consensual sex play that centers on bondage and powerplay, ranging from administering or receiving different levels of intensity of pleasurable pain. Unlike “vanilla” sex, which is understood as not kinky, socially-normed sexual behavior (Meyer & Chen, 2019; Weiss, 2006), BDSM aims to intensify physical or psychological stimulation through bondage, reward and punishment, and eroticized power differences. Powerplay, or the consensual power exchange between “Dominant” and “submissive” (D/s) role partners, is common practice within BDSM culture. In a D/s powerplay relationship, usually one partner adopts the role of a Dominant or “top,” while the other partner(s) take on the

submissive or “bottom” role. One may also “switch” between both roles, depending on the situation or other partners (see Simula, 2019 for a review). This power structure may apply only during BDSM play “scenes,” predetermined space-specific and time-limited BDSM interactions that all partners consensually agree upon, or occur daily as a 24/7 lifestyle (Dancer et al., 2006; Pitagora, 2013). Scenes are typically co-constructed by all involved partners. Whether such planning involves explicit or implicit consent varies across individuals and partnerships, but the norm is for continual and unambiguous consent to be just as important for persons in the submissive role as it is for dominant partners; for example, safe words (or signals) are often agreed upon before a scene to ensure that both partners are empowered to explicitly withdraw consent at any time. Regardless of the duration of the powerplay, Dominants take on full responsibility of the scene, safety, and caregiving, whereas submissives intentionally surrender their autonomy and power to the Dominant. In this exchange, Dominants decide what sexual activity occurs, for how long, and in what capacity, while the submissive, the follower, submits to the Dominant’s control (Simula, 2019). Thus, Dominants accept the responsibility of engineering and directing a scene, choose the tools, narrative, and activities, and make other subsequent decisions during a scene. Moreover, Dominants must constantly evaluate submissives’ emotional affect, behavior, comfort, and satisfaction at all times (Hébert & Weaver, 2015; Turley, 2018). Conversely, submissives become focused on

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<sup>1</sup>We intentionally use “power play” instead of “power exchange” to reject the dyadic and hegemonic idea that one partner must be disempowered while the other partner is empowered. Indeed, *all* partners involved are consenting to negotiated power differences during play time, often regardless of gender, sexuality or relationship strategy.

<sup>2</sup>We use the traditional difference in capitalization between power play roles to symbolically refer to their innate power differences.

 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/00224499.2022.2111400>.

the immediate environment, behaviors, and sensations around themselves, and nothing else (Cross & Matheson, 2006; Pitagora, 2013). In BDSM, submissives consensually subject themselves to the preempted scene and decisions made by a Dominant, and thus have the freedom to relinquish control and decision-making responsibilities, rather than revel in them (Turley, 2018).

To many BDSM practitioners, their D/s role is an integral part of their sexual identity, affecting not only their sexual scripts (Simula & Sumerau, 2019), but also their non-sexual social interactions (Bezreh et al., 2012; Hébert & Weaver, 2014; Hughes & Hammack, 2019; Waldura et al., 2016). In fact, BDSM practitioners, especially Dominants, have been shown to exhibit higher, rather than lower, levels of subjective well-being compared with submissives and non-BDSM/vanilla practitioners (Connolly, 2006; Richters et al., 2008; Wismeijer & Van Assen, 2013). Moreover, Dominants self-report as less neurotic, more extraverted, more open to new experiences, more conscientious, and less rejection sensitive compared to submissives (Hébert & Weaver, 2014; Wismeijer & Van Assen, 2013). Many BDSM practitioners have also stated that their participation is a core component of their identity beyond a mere performance of atypical sexual behaviors (Bauer, 2016; Gemberling et al., 2015; Hughes & Hammack, 2019; Moser & Kleinplatz, 2006; Sprott & Williams, 2019). Given the misconceptions surrounding BDSM, many practitioners attempt to conceal their BDSM affiliation and identification as a technique to avoid further stigmatization and discrimination (Dunkley & Brotto, 2018; Waldura et al., 2016; Wright, 2006), which has led some to classify BDSM-identification as a sexual orientation, and even as a marginalized sexual identity (Bezreh et al., 2012; Gemberling et al., 2015; Hughes & Hammack, 2019; Yost & Hunter, 2012).

Because BDSM practitioners are subject to similar social stigma and mental health outcomes of other recognized sexual minority groups (i.e., on the basis of sexual orientation [LGBQ+]), it is important to understand how practitioners' personality and social behavior help define their identity and contribute to various social and health outcomes (Gemberling et al., 2015; Hughes & Hammack, 2019). The BDSM community is a diverse group made up individuals across multiple gender, sexual orientation, age, class, racial, and ethnic spectrums (Bauer, 2016; Galupo et al., 2016; Sheff & Hammers, 2011), so it is vital to recognize the complexity of identity formation when de-pathologizing and defining BDSM as a central stigmatized identity. In order to treat mental health issues, form and enforce legal protections, and prevent discrimination against BDSM-identifying individuals, it is first necessary to establish a foundation of basic research about individual differences associated with BDSM practice and roles. Thus, the present study took an exploratory approach that complemented self-report surveys with text analysis.

Natural language use is a quantifiable behavior that provides a rich portrait of how a person characteristically thinks, reflecting not only what a person is attending to but also how they organize their thoughts and relate to others. Whereas responses to surveys are limited by the foresight of the experimenter and the wording of the questions (Schwarz, 1999), written responses to open-ended questions allow individuals to speak for

themselves – something that is critically important in research involving marginalized or minoritized participants who may mistrust or feel misrepresented by past research (Banyard & Miller, 1998). Language patterns in everyday language use, such as writing or conversations, reliably correlate with personality, psychological states (e.g., moods or emotions), and behaviors (e.g., health behavior; Pennebaker, 2011; see Tausczik & Pennebaker, 2010, for a review). Rather than focusing on the content of language, studies in psychology have predominantly examined the *style* of language through people's use of function words (e.g., pronouns, verbs, articles, punctuation). Analysis of style looks beyond the topical meaning of the language and instead explores *how* words are being used. In fact, several studies have found an association between specific function words and personality traits (Groom & Pennebaker, 2002; Hirsh & Peterson, 2009; Park et al., 2015; Yarkoni, 2010), romantic and sexual relationships (Ireland et al., 2011; Lorenz & Meston, 2012), and social behavior (Pennebaker & Lay, 2002; Simmons et al., 2005). Language analysis is also one method to overcome the shortcomings of self-reports, for it is reliable, face-valid (particularly when using dictionary-based approaches like the Linguistic Inquiry and Word Count, or LIWC, program), and avoids issues related to participant characteristics (e.g., social desirability, extreme responses, dishonesty, and acquiescence bias; Boyd & Pennebaker, 2017; Iserman et al., 2018). Text analysis is also practically beneficial because it tends to be efficient and generalizable (Pennebaker et al., 2001). Therefore, the current study sought to assess sexual and non-sexual behaviors and personality attributes of BDSM practitioners relative to non-practitioners without relying on self-report measures that may bias our results and limit our understanding of BDSM practitioners' identities.

The present study took a data-driven rather than a theory-based approach to model selection. We chose an exploratory approach due to the lack of existing quantitative linguistic research on text samples written by people in various BDSM roles. Moreover, through statistical modeling, we limited the potential biases associated with current theoretical applications and instead made predictions outside of stabilized conceptualizations (Iserman et al., 2018). Given the lack of prior research on linguistic cues associated with BDSM activity, the present study was primarily exploratory. However, we suspected that distinguishable differences in language patterns would be apparent when comparing Dominant and submissive roles and comparing active BDSM practitioners to inactive "vanilla" individuals (i.e., non-practitioners). Thus, the current study used bottom-up model selection to select the most parsimonious language-based model of a continuous outcome and two binary outcome variables. Specifically, we regressed participants' activity level in BDSM and D/s powerplay role identification on standardized LIWC language frequencies to determine the best language predictors for each model.

## Method

### Participants

Participants consisted of 261 self-identified BDSM and non-BDSM/vanilla practitioners recruited from online communities. Most participants self-identified as BDSM practitioners

(55.9%), cisgender women (44%), heterosexual/straight (26.8%), and completed some college (32.6%). See Table 1 for a full list of participant demographics.

## Procedure

Participants took part in the study between July and September 2019. The full survey, which consisted of 4 different measures, was posted as a link in forums on several social networking sites, including Reddit (i.e., a social network of various communities), Fetlife (i.e., a social networking site for the BDSM, Fetish and Kink community), 3DXChat (i.e., a multiplayer 3D sex game), Twitter, Facebook, and in a university e-mail listserv to assess how BDSM practitioners' language use and personality differed from that of non-practitioners. Explicit permission was acquired from moderators to post a link to the study in Reddit subcommunities (e.g., r/FemDomCommunity, r/PetPlayBDSM, r/BDSMAdvice) and Fetlife groups (e.g., Daddy Doms and babygirls). Recruitment procedures were similar for non-practitioners, but recruitment posts were posted in Reddit subcommunities not directly affiliated with BDSM (e.g., r/love, r/asktransgender). The recruitment posting noted that the study examined the

relationship between individuals' natural language use, personality, and sexual behavior and that participation would expand the literature on the psychology of personality and sexuality. Everyone over the age of 18 was invited to participate and participation was not limited by gender, sexuality, or behavior. As compensation, participants were entered in a raffle to win one of eight Amazon eGift cards, worth \$30 each. Given our explicit interest in outcomes related to language use, only data from participants who completed at least one writing prompt were included in final analyses.

## Measures

### Demographics

Participants were asked to provide basic demographic information, including BDSM practitioner identity, powerplay role identity, gender, sexual orientation, romantic relationship status, sexual relationship status, and highest level of education completed (See Supplementary File for the full list of questions).

### Writing Prompts

Participants were asked to complete two writing prompts, writing at least 200 words each before moving to the next section. One writing prompt asked participants to write about a current/most recent romantic or sexual relationship (word count  $M = 296.34$ ,  $SD = 217.18$ ); the next writing prompt asked participants to write a short romantic or erotic story (word count  $M = 320.97$ ,  $SD = 298.81$ ). This writing prompt noted that the "story could be sexually explicit, but the 'rating' of the story (e.g., PG or NC-17) was entirely up to the participant." The instructions in both writing prompts clarified that the story should have at least two characters but may have more; individuals' internal dialogue, spoken dialogue, or descriptions of actions could be written entirely from a first-person/inside or third-person/outside perspective; and the story could be completely fictitious or be based on personal experiences. The writing prompts also asked participants to consider addressing some suggested questions in their narratives, including "What is the relationship between the characters?" and "What are the characters' motives?" among others (see Supplementary File for the full list of questions).

LIWC (Pennebaker et al., 2015) was used to process responses in addition to a sex dictionary and a BDSM dictionary created by the first author. For both standard LIWC categories and the novel sex dictionary, the program compares texts against internal dictionaries (lexicons or word lists) and outputs the percentage of total words in the text that matched each word list. LIWC's standard categories include linguistic (e.g., conjunctions, personal pronouns), psychological (e.g., anxiety, affiliation motives), and content (e.g., work, leisure) categories.

The novel sex dictionary was created using slang words from Urban Dictionary, online glossaries, and a risky sex lexicon (Ireland et al., 2015). Example items include "69," "erection," "condom," and "vagina." The BDSM dictionary was created using various BDSM glossary websites (e.g., Fetlife's Glossary of Kinky Terms, Wikipedia's Glossary of

**Table 1.** Demographic characteristics of participant sample (N = 261).

	<i>n</i>	%
Self-identified BDSM practitioner		
Yes	146	55.9
No/I am vanilla	66	25.3
Not sure	49	18.8
Self-Identified power-play role	146	
Dominant	23	8.8
submissive	80	30.7
Switch	43	16.5
BDSM activity level		
Not at all/I am vanilla	38	14.6
Just curious right now	29	11.1
Curious and want to try	45	17.2
Once in a while to spice it up	54	20.7
I live the lifestyle when I can	76	29.1
24/7	19	7.3
Gender		
Cisgender Woman	116	44.4
Cisgender Man	79	30.3
Transgender Woman	25	9.6%
Transgender Man	13	4.6
Non-binary	22	8.4
Questioning	6	2.1
Sexual Orientation		
Asexual	12	4.6
Bisexual	65	24.9
Heterosexual/Straight	70	26.8
Mostly Heterosexual	42	16.1
Homosexual/Gay	16	6.1
Homosexual/Lesbian	13	5
Pansexual	34	13
Demisexual	6	2.1
Another Orientation (e.g., sexual, androsexual)	3	1.1
Education		
Less than high school	4	1.5
High school	41	15.7
Some college	85	32.6
Associate's degree	20	7.7
Bachelor's degree	67	25.7
Master's degree	34	13
Professional degree	6	2.3
Doctoral degree	4	1.5

BDSM, and ReKink's BDSM And Kink Terminology: A To Z) and included terms like "daddy," "age play," and "sadism." Although some words included in the dictionary have more common meanings in other contexts (e.g., *daddy*, *bottom*, *play*), these terms would be appropriately considered sexual and BDSM-relevant within erotic texts. Both dictionaries were crosschecked to ensure there were no terms in common between dictionary files. We used asterisks as wildcards to capture additional characters for word stems when it was safe to do so without capturing unintended non-sexual terms (e.g., *breast\**) and listed every version of a word in other cases. Because we were primarily interested in language use uninfluenced by narrative composition, story content, or personal relevance, we concatenated scores across the two writing prompts to create an all-inclusive text.

### Data Analysis

Before analyses commenced, language transcripts were manually cleaned for spelling errors, abbreviations, contractions (e.g., verb contractions, possessive vs. is apostrophe+s, it's, apostrophe+d), and shorthand using the Reformatting Transcripts for LIWC 2015 guide and the Find and Replace function in Microsoft Excel. Responses were then run through LIWC to process participants' language use. Of the original 1,659 cases, 1,372 were removed from the data set for no response to either writing prompt. Two additional cases were flagged for having inappropriate responses in the word prompts and hence removed, leaving 285 cases in the sample. Twenty-four cases were removed from data analysis due to concerns regarding representation, as these participants reported accessing the survey from the DeadBedrooms subreddit (a help-seeking forum for long-term sexless relationships), which may not be representative of the general "vanilla" population. The final sample contained data from 261 participants.

Two powerplay roles, self-identified Dominants and submissives, were included in analyses. Although switches were included in the original measure, this role was not of primary interest given that switches exhibit characteristics and behaviors of both Dominants and submissives interchangeably. Due to the complexity and flexibility of this role, we did not include a switch identity outcome variable in Model 2 or Model 3 analyses. However, because Model 1 was based on BDSM activity level rather than role identity, all participants were included in this model including self-identified non-practitioners, Dominants, submissives, switches, and participants who were "not sure" of their BDSM identity. The BDSM activity variable remained continuous and was recoded so that lower values represented no-to-little activity in BDSM (1 = *Not at all/I am vanilla*, 2 = *Just curious right now*, 3 = *Curious and want to try*, 4 = *Once in a while to spice it up*) and higher values represented more frequent activity in BDSM (5 = *I live the lifestyle when I can*, 6 = *24/7*).

Three separate regression models were derived to determine the variables that best predicted the three outcome variables: BDSM activity level, Dominant identity, and submissive identity. For each model, we selected predictors from the full set of variables by calculating the Pearson's  $r$  correlation of each LIWC category with the outcome variable within the sample.

**Table 2.** Descriptive statistics for predictor variables.

Predictor	$\Sigma$	$M$	$SD$
Death	10.79	.04	.13
Tentative	564.41	2.16	1.14
Perceptual processes	958.11	3.67	1.89
BDSM vocabulary	571.65	2.19	1.71
Interrogatives	323.62	1.24	.95
Friend references	130.07	.50	.53
Sexual	315.31	1.21	1.01
Feel	417.97	1.60	1.20
Apostrophes	129.06	.49	.68
Second-person pronouns	210.78	.81	1.35
Personal pronouns	3967.21	15.20	4.34
Power	575.56	2.21	1.12
Female references	878.17	3.36	3.18
Family reference	84.96	.33	.56
Causation	374.73	1.44	1.00

Any LIWC categories with an absolute correlation over .1 with any of the outcomes was added as a predictor in the associated regression model. We used the backwards stepwise regression package in R to run regression analyses for each outcome variable. AIC was used to compare across the models. As a final step, we entered significant predictors into a linear regression model. From there, non-significant and redundant language predictors were manually removed from the regression model until only a few significant interpretable predictors were left. The initial candidate variables included the full set of LIWC variables, including function word categories (e.g., personal pronouns, adverbs), topical or psychological categories (e.g., perceptual processes, social processes, cognitive processes), and punctuation, as well as the BDSM dictionary created by the first author.

Finally, to provide qualitative context to our regression results, we computed composite scores from standardized scores of predictors associated with each outcome variable in order to select the top ten narratives that best represented each outcome. Based on these texts, we used LIWC's color code text function to highlight the significant linguistic predictors present in the texts and consider the context in which each was used. The final models for each of the three outcome variables with example narratives are discussed below. Descriptive statistics for each significant predictor can also be found in Table 2.

## Results and Discussion

### Model 1: BDSM Activity

After running backwards stepwise regression analyses, the best fitting model contained 14 predictors and fit better than the initial model containing all the predictors (AIC = 156.15). We then manually removed non-significant predictors from the model until only a few significant interpretable predictors were left. That is, we removed categories that were not easy to interpret, regardless of their p-value, in addition to removing non-significant categories. The final model that predicted BDSM activity level as the outcome variable contained four predictors: death, tentative, perceptual, and BDSM dictionary words,  $F(4, 256) = 19.76$ ,  $p < .001$ , Adjusted  $R^2 = .224$  (see Table 2). Likely due to our multiple methods of analysis for this continuous outcome variable model, the fit for this model was



relatively poor (AIC = 905.89), but easily interpretable. Specifically, participants who used perceptual (e.g., *look, heard, feeling*) and BDSM dictionary words (e.g., *bondage, dungeon, dominate*) more often in their stories were more active in BDSM, and participants who used death (e.g., *bury, coffin, kill*) and tentative words (e.g., *maybe, perhaps*) more often were less active in BDSM (see Table 3).

Narratives that used a great number of perceptual and BDSM dictionary words and few tentative and death words were associated with greater involvement in BDSM among participants. These participants tended to describe romantic or erotic interactions between their characters. Perceptual words entail greater mindfulness and in-the-moment attention between characters (Hayes & Wilson, 2003), so we would expect to find that these narratives contain palpable physical detail. For example, one participant professed their devotion, “I have *seen* you. I have *seen* the *beautiful*, amazing, *sweet*, kind, caring, gentle soul that you try so desperately to hide behind the snark and the humor.” Several stories illustrated uncensored sexual activity between characters utilizing sexually erotic language (e.g., “He pumps his cock into me until I *feel warm* with his cum, he is *gripping* my breasts *hard* and *tight* while climaxing”). These perceptual words add depth and imagery to the prose, suggesting language that is sexual, rich, and prolific. When combined with frequent use of words from the BDSM dictionary, the stories are not only sexual, but also kink-focused. These participants referenced BDSM sex toys (e.g., *collars, leather, gags*), power play (e.g., references to *Master, daddy, dominant, and submissive*), and relationship styles (e.g., “an active 24/7 Dominant/Submissive lifestyle” and “Daddy Dominant Little Girl”) into their stories, often referring to personal and fictitious relationships. Additionally, the lack of tentative words may have reflected greater comfort with the writing task or better storytelling (Tausczik & Pennebaker, 2010) as well as expressed aptitude in understanding and communicating one’s sexual desires, which is essential for BDSM relationships and negotiations (Wismeijer & Van Assen, 2013). In sum, the narratives of very active BDSM practitioners displayed specific knowledge of BDSM practices and portrayed BDSM in a vivid, forthright fashion.

Comparatively, narratives indicating less or no BDSM activity were characterized by fewer perception and BDSM dictionary words and more tentative and death words. One participant described an interaction between the speaker and a female character, yet the prose used fewer descriptions associated with physical sensations: “The next time, the man is ready for the woman, and they begin to write on purpose, together, exploring the realms of shared emotion.” It is also apparent that the author rarely engaged in BDSM practices as evinced by the absence of BDSM-relevant vocabulary in the narrative. Instead, there was a noticeable

pattern of participants writing in bullet-point fashion and omitting intimate activities and sensations (e.g., “We get down to business, I put my lips around his cock, which is just as big as our friend joked about it being”; “We kiss. She is into me. As things are getting heated, she removes her shirt and purple bra . . . I play with her boobs and suck on her nipples. I nibble on them a bit too roughly and hurt her, but we get back into it”). Moreover, the increased number of tentative words indicated self-insecurity (e.g., “I got *kind of* obsessive about him in an unhealthy way . . . We *probably* spent too much time together and were too similar”; “She always finds out the truth, *mostly* when she asks me something I *kind of* give it all away, then she starts to ask a *lot of questions* and demanding answers”) and less definition in story development (e.g., “I *guess* she was *somehow* attracted by me, but I am not 100% sure”; “We only met with *some* friends to hangout, *mostly* talk about nothing and everything and *maybe* drinking *some* beers”). The presence of tentative words thus suggested weakly constructed narratives devoid of confidence and style.

The inclusion of death words predicted less involvement in BDSM. Given previous research showing that depressed individuals use more death-related words in language (Tausczik & Pennebaker, 2010), the presence of death words might signify a higher rate of neuroticism among inactive and non-BDSM participants. Indeed, BDSM research samples often exhibit less neuroticism compared to non-practitioners (Richters et al., 2008; Wismeijer & Van Assen, 2013). These participants may have been preoccupied with the loss and grief that is exhibited in their writings about personal or fictitious relationships (e.g., “Although his wife had *died* a year beforehand, he wanted to stay true to his promises to the Force that he had made after her *death*. The Force was a secret state and church funded organization, that promises to defend the will of the *dead*, at least that is what the maniacs think that join the Force”; “But in the process, he ended up *dying*. I did not know how to handle it, so I just brought the body along to give him a proper *burial*”). Previous research shows that BDSM practitioners report lower depression scores compared to the general population (Connolly, 2006); thus, the disuse of death words among active BDSM practitioners may signify positive mental health relative to non-practitioners. Words like “bury” and “kill” were also used occasionally in intimate contexts such as cuddling and intercourse, which pointed to some flexibility in how this category was utilized.

## Model 2: Dominant Identity

The model that predicted a participant self-identifying as a Dominant contained six predictors: interrogatives, references to friends, sexual imagery, possessive apostrophe, and second-person pronouns. The AIC for the final model indicated good fit compared to the initial model containing all the predictors (AIC = 141). Thus, the participants who used interrogatives (e.g., *how, when, what*), friend references (e.g., *buddy*,

**Table 3.** Summary variables predicting BDSM activity.

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI</i>
Death	−1.42	.67	−2.12	.03	1.31
Tentative	−.20	.08	−2.55	.01	1.57
Perceptual processes	.13	.05	2.76	.006	.10
BDSM vocabulary	.38	.05	7.52	<.001	.10

neighbor), sexual imagery (e.g., *horny, love, fuck*), possessive apostrophes, and second-person pronouns (e.g., *you, your*) more frequently were more likely to identify as a Dominant rather than as a switch, submissive, or non-practitioner (see Table 4).

Overall, participant narratives for this model made use of social interaction and relationships through usage of friend words and second-person pronouns. Several authors depicted interactions between characters, frequently transcribing dialogue, as well as behaviors and internal thoughts (e.g., “Now I want *you* to make me scream of pleasure, I want to feel *your* breath on my neck, *your* teeth on my shoulder, I beg *you* daddy”; “Next, my hands all over *you* squeezing, pinching, rubbing, caressing all of *you*, every inch from *your* gorgeous chest to *your* delicious thighs”). The high frequency of second-person pronouns in these stories indicated great immediacy and interpersonal connectedness between the characters, such that characters were focused on the other character rather than self-focused (Kacewicz et al., 2013). Dominants characteristically emphasize their partners’ pleasure while directing scenes; thus, this “other” focus revealed participants’ self-reported Dominant identity (Pitagora, 2013). Moreover, the frequent use of second-person pronouns implied the powerful and controlling status of the participants. Results from Kacewicz et al. (2013) suggested that high status individuals holding powerful and leadership-based positions direct their attention toward others instead of focusing on themselves. As expected, the individuals who used numerous second-person pronouns were instinctively exercising Dominant mannerisms, which thereby revealed their own self-proclaimed Dominant identity. It is also worth noting that men typically use more second-person pronouns than women (Newman et al., 2008), which may partly explain this result, given that participants who identified as Dominant were predominantly men.

Greater use of friend references suggested social connectedness and extraversion (Park et al., 2015). Previous studies of personality among BDSM practitioners have found that Dominants exhibit higher levels of extraversion than submissives and non-practitioners (Hébert & Weaver, 2014; Wismeijer & Van Assen, 2013). Participants within the current study often used friend references when referring to previous relationships (e.g., “She wanted to hook up with her old *boy-friend*. I wanted it to be exclusive”), current partners (e.g., “. . . My dynamic with my *partner* (cis female) is very much brat and brat tamer”), or friends more generally (e.g., “Wife wants to watch him fuck the *friend* while the *friend* has her head between the wife’s legs”). Like the use of second-person pronouns, the friend references in the above contexts signified an “other” focus by consistently referring to other characters rather than the self directly. These narratives hence implied that Dominant participants obtained gratification from outside

themselves and were assertive and stimulated in their social interactions, which supports previous findings concerning personality.

Several personality traits were also noticeable in the narratives, which strengthens previous findings that differences in extraversion and openness exist between Dominants and submissives (Hébert & Weaver, 2014). As expected, the frequent employment of sexual vocabulary in these narratives indicated stories that were sexually explicit and used graphic imagery. This was consistent with findings that Dominants score higher in openness compared to submissives (Hébert & Weaver, 2014), which may extend to openness in discussing sexuality. More frequent use of interrogatives within narratives also appeared to signify greater explanation of detail and information. It is important to note that use of this language in these narratives more closely reflect relative pronouns rather than actual interrogatives. The version of LIWC that we used in our analyses does not differentiate interrogative pronouns from relative pronouns, some of which share the same word forms (e.g., *who, which, where*; Yan & Li, 2018). Thus, these words were generally categorized as interrogatives despite the absence of questions. Thus, the use of “interrogatives” seemed to act instead as relative clauses because they provide additional information about the subject of the independent clause to which they relate. Like adjectives, these clauses described the subject and joined clauses (e.g., “She reaffirmed that I am amazing and to just be myself and he will love me, *which* was exactly *what* I needed to hear”; “All of the talk about *what* would be tied *where* had seemed less real before she walked into the room”). The use of interrogatives, or rather relative pronouns, thus showed that participants were answering implied questions rather than asking them, providing descriptive details and information necessary to contextualize their stories and complete their meaning (Muir et al., 2020). It is no mistake that “interrogatives” (i.e., relative pronouns) predicted Dominant identity, given that Dominants must think about specific details when leading scenes and negotiating procedures for play with partners (Turley, 2018). Participants were intuitively employing Dominant behaviors and cognitions in their language without explicit instruction, seemingly naturally portraying their own dominance. In sum, extraverted personality traits associated with Dominant identity were unveiled in participants’ language styles when they had free rein in narrative content and composition.

Frequent use of possessive apostrophes predicted Dominant self-identification. The transcripts in the current study were cleaned so that contractions were broken down (i.e., “don’t” to “do not”); thus, the apostrophes in participants’ narratives represented possession by a person referred to using proper nouns (e.g., “*Sarah’s* free hand begins to draw small shapes on *Emily’s* leg while they talk”) or a noun (e.g., “Small strands of hair that had fallen loose from my *partner’s* bun framed their face”). The high rate of possessive apostrophes suggested ownership and responsibility of characters within the stories. Relatedly, Dominants must exert ownership with their partners and exercise responsibility during BDSM scenes that involve power play. Perhaps because Dominants are accustomed to such control, their language instinctively incorporates

**Table 4.** Summary variables predicting dominant identity.

Predictor	<i>B</i>	<i>SE</i>	<i>Z</i>	<i>p</i>	<i>CI</i>
Personal pronouns	.11	.04	2.84	<.001	.08
Power	.49	.14	3.42	<.001	.27
Female references	-.13	.05	-2.67	<.001	.10
Family references	.66	.25	2.61	<.001	.49
Causation	.59	.18	3.22	<.001	.35

possessive linguistic structures. Hence, possessive apostrophes may characterize Dominants' desire to direct a scene, manage the safety of all partners, and wield authority over submissive partners.

Considering our finding that apostrophes represented possession by a person, we conducted follow-up exploratory analyses to examine use of possessive pronouns within these Dominant narratives. Results indicated 3.83% of all the words in the selected narratives were third-person possessive pronouns, 1.88% were first-person possessive pronouns, and only .30% were second-person possessive pronouns. Moreover, possessive pronouns appeared more frequently in the Dominant identity texts compared to the submissive identity texts, further extending our postulation that possessive language via apostrophes and possessive pronouns imitate Dominants' power-based identity and behaviors.

### Model 3: Submissive Identity

The final general linear model that predicted participant self-identification as a submissive contained causation, power, personal pronoun, and female reference LIWC categories. The AIC for the final model indicated good model fit (AIC = 286). Participants who used causation words (e.g., *because*, *effect*), power words (e.g., *superior*, *bully*), and personal pronouns (e.g., *I*, *them*, *her*) more frequently and used female references (e.g., *girl*, *her*, *mom*) less frequently were more likely to identify as submissive than any other group (see Table 5).

Words related to power were frequent throughout the stories, implying that powerplay is a salient element in the stories, and predicted submissive identity. Stories referenced specific power roles by title, as many contained interactions with their BDSM play partner (e.g., "She is *dominant* and a *mommy*"; "I knew that my *master* liked the view and enjoyed a good show") When role titles were not being used, power terminology appeared in descriptions of behavior. Several referenced discipline (e.g., "He had rules for me and one rule was to ask permission"), obedience (e.g., "The kiss was denied. Reluctantly I obeyed"), and physical restraint (e.g., "She holds my head against her chest and sings to me as I struggle to get away"). Submissives may be more focused on power differences, or at least think about it more, because they are the receiving partner of commands and authority. Submissives are expected to follow and concede to Dominants' requests without hesitation or deliberation. The self-described submission and dominance within these narratives may thus explain the number of power references throughout Submissive-identified stories, and not Dominant-identified stories.

**Table 5.** Summary variables predicting submissive identity.

Predictor	<i>B</i>	<i>SE</i>	<i>Z</i>	<i>p</i>	<i>CI</i>
Personal pronouns	.11	.04	2.84	<.001	.08
Power	.49	.14	3.42	<.001	.27
Female references	-.13	.05	-2.67	<.001	.10
Family references	.66	.25	2.61	<.001	.49
Causation	.59	.18	3.22	<.001	.35

Similarly, the presence of family references in the narratives suggested power play in the form of familial structures. In several participants' stories, "mommy" and "daddy" were used throughout when referring to Dominant partners. Not only were submissive narratives saturated with power words, but this language also implied interpersonal intimacy between submissives and Dominants. Occasionally, the Dominant partner was also mentioned as "husband" or "wife," indicating marital dynamics as well as "parental," so to speak. Notably, submissive narratives used very few female references compared to Dominant narratives. Perhaps this difference suggests fewer woman-identified partners within submissive narrative relationships. This is especially interesting given that most of the submissives self-identified as women ( $n = 67$ ).

Another category that was used frequently throughout submissive-identified narratives was causation words. In line with our predictions, many of these words overlapped with references to power (e.g., "She *forces* me to suck on her breast"; "That word always *makes* me instantly snap into obedience, so I stand"). Characters mentioned being made to do things (e.g., "he was behind me and *made* me stay there for a few minutes whilst he just stared") and that their Dominants used toys during their interactions (e.g., "It is a carbon fiber rod that is used to create pain and large welts on the skin"). Participants also used "how" and "because" repeatedly, providing explanatory information as to why or how an event occurred (e.g., "I said yes, because I hate sitting in one spot"). The use of explanatory information could indicate an attempt to understand one's experiences and behaviors, which implies a self-reflective element among the authors (Pennebaker, 2011). Submissives typically prioritize their own perceptions rather than their partners', which may have been a distinguishing linguistic factor when predicting one's power-play role identity. Kacewicz et al. (2013) found that individuals who inhabit low-status roles often use self-focused language. Such findings may apply to BDSM submissives as well, as they yield power to Dominant partners and concede to requests without deliberation. These narratives alluded to linguistic subservience which in turn mirrored and predicted submissive power role identification.

The use of personal pronouns (e.g., *I*, *you*, *them*, *itself*) suggested that submissive narratives were attentive to characters in their stories. Pronouns reflect attentional allocation, and personal pronouns indicate that people (the narrator and others) are the subject of attention (Tausczik & Pennebaker, 2010). The high frequency of personal pronouns in this context suggests close relationships (e.g., "Listening to *him* call *me* his good little girl and losing *myself* in *him*") and dynamic interactions between characters (e.g., "*he* got up and started to play with *me*, roughly grabbing *my* body"). Moreover, the speaker was often included in pronoun usage (e.g., *I*, *me*, *mine*), which suggested attention not only on the Dominant, but on their own physical and psychological experiences. First-person pronouns appeared considerably more in submissive-identified profile narratives compared to Dominant ones, reaffirming that self-focused elements predict submissive identification. Because submissives are especially dependent on their Dominant partners, it makes sense to find that these narratives devoted their attention to their Dominants as well as their own



pleasurable experiences. Overall, the individuals who used power references, causation words, and personal pronouns were unconsciously exercising submissive mannerisms, which thereby uncovered their own self-reported submissive identity.

## General Discussion

The models derived for the current study may offer some insight into the personality and behavioral differences between BDSM practitioners and non-practitioners, as well as thoroughly expand our understanding of the power dynamic among BDSM practitioners. In sum, active BDSM practitioners' narratives used more perceptual language, perhaps indicating more vivid, mindful (Kaplan et al., 2018), three-dimensional storytelling. Additionally, greater use of perceptual language might be considered a focus on sensation, which may indicate some connection to high sensation-seeking, another personality trait that is characteristic of BDSM practitioners (Schuerwegen et al., 2021; Turley, 2016). Non-practitioners' narratives used more tentative and death language, which might suggest potential discomfort and neuroticism in language. This finding supports extant literature of personality and psychological states of BDSM practitioners relative to that of non-practitioners (Hébert & Weaver, 2015; Wismeijer & Van Assen, 2013); very BDSM-active practitioners used words that were open and intimate, suggesting healthy personal and relational well-being (Hayes & Wilson, 2003), compared to non-practitioners who used language that was abstract, gloomy, and less sexually charged. Generally, this model supports prior claims that distinct personality differences exist between those who practice BDSM and those who do not, such that more active practitioners are disposed to kinky thoughts and behaviors, sensation seeking, self-assurance, and less neuroticism relative to inactive or non-practitioners. Moreover, these differences can be measured through written language as well as personality questionnaires.

The final predictors for Model 2 and Model 3 are consistent with the attributes associated with each powerplay role – Dominants take on full responsibility of the scene and decision-making, whereas submissives focus on their perceptual experience when deferring to a Dominant. Language differences also mirrored status management of power findings from Kacewicz et al. (2013), such that Dominants (i.e., high-status) displayed an extraverted, other-oriented focus but submissives (i.e., low-status) displayed a self-oriented focus. Submissives on the other hand, were concerned with power structures and referenced power dynamics by way of exchanges with Dominant partners. Using these models, we found that language use mirrors the underlying power structure that is unique to BDSM, which in turn posits a tacit association between environmental influences, personality, sexual desire, and non-sexual behavior.

Language analysis has not been used to study BDSM communities before. Moreover, mainstream research on BDSM behaviors has historically focused on psychopathology or has tried to pathologize practitioners. Therefore, studying the narratives of BDSM community members – especially using an exploratory approach and trying to objectively present salient

aspects of their experiences, in their own words – offers a perspective unheard of in psychological literature. Instead of disproving theories of trauma, abuse, and mental illness, which commonly occurs in extant literature, the current study explored the under-researched, existing social dynamics between BDSM practitioners. Overall, our findings show positive, consensual, and passionate interactions within BDSM narratives. This may be especially valuable for de-pathologizing BDSM among clinicians and dispelling misconceptions about abusive BDSM relations. Results further suggest that BDSM and power role affiliation correspond to personality differences. These differences provide evidence in support of conceptualizations of BDSM as a distinct identity, separate from those who do not engage in BDSM, and extends the idea that a given power role might be suited to a particular temperament, instead of arbitrary inclinations. Using language patterns to understand diverse sexual identities and behavior may illuminate traits and concerns unique to the BDSM community, which consequently may warrant better resources and support for practitioners. Without this research, BDSM practitioners' needs will remain trivialized and invisible, continuing the systematic disenfranchisement and social stigmatization of diverse sexualities.

## Limitations

The present study was limited by the lack of collected demographic information. Racial, ethnic, and class disparities are prevalent in BDSM communities which therefore impact the experiences and identities of already marginalized community members (Sheff & Hammers, 2011). Because we did not collect participants' full demographics, we cannot examine how intersecting identities might contribute to language differences. Thus, future research of the BDSM communities should make it a point to measure race, ethnicity, nationality, disability, and class, among other identities, to better understand inequity and underrepresentation in predominantly White and middle to upper class BDSM communities.

In addition to the sampling biases inherent in recruiting from Reddit's relatively young, masculine user population, our samples may have been further biased by the subreddits in which we advertised. The subreddits used to recruit vanilla participants, in particular, may have exaggerated the well-known bias toward volunteers for research on relationships and sexuality being less sexually conservative (i.e., more positive feelings toward sex and more lifetime sexual experience) than the average person (Strassberg & Lowe, 1995). Specifically, *r/love* and *r/asktransgender* may have more sexually liberal memberships than more truly neutral subreddits that have nothing to do with romance or gender (e.g., focusing on ostensibly nonromantic and nonsexual hobbies, such as gardening). Future research seeking to recruit vanilla comparison or control groups for exploring specific sexual communities should cast a wider net in order to counteract these potential biases.

Because the survey was entirely online, only individuals with access to the internet and keyboard devices could participate. Although the internet has improved researchers' ability to connect with members of the BDSM community, access to

technology remains a barrier for many people. Participants were discouraged from using a mobile device, but several attempted to use smart phones for the study and thus encountered visibility issues. As a result, many participants did not complete the writing prompts or dropped out of the study. Finally, the survey format did not actively incorporate accommodations for individuals with physical disabilities. Therefore, the present study's sample was restricted to individuals with the economic and physical means to access the survey. Also, because demographics of reddit users tend to be skewed toward young, male, Americans and English speakers, researchers should thus consider distributing surveys to non-reddit samples, such as at local BDSM meetings, regional conferences, sex toy shops, or on other online platforms. Finally, researchers should make psychological research more accessible to people with disabilities (Vereenooghe, 2021). For example, researchers can generate simple and concise surveys and use online survey platforms that allow alternative devices and screen readers.

### Future Directions

Future studies may benefit from more seamless integration of top-down *and* bottom-up approaches to language dictionary-based prediction. Before modeling these same data, the first author also conducted a theoretically informed analysis to examine differences in linguistic style between self-identified BDSM practitioners and non-practitioners as well as between Dominants and submissives (Crane, in preparation). This top-down approach coupled with the present bottom-up approach permitted thorough analysis of an exploratory project and thus informed a comprehensive interpretation of these data. In a similar manner, future researchers may capture outcomes that would otherwise be obscured from using a single data analysis approach. Regardless, more work needs to explore BDSM identities, language, and behavior to further define conceptualizations of this marginalized sexual identity. Future studies should also consider measuring BDSM identity centrality as a covariate, a variable that was regrettably absent from the present data set. Moreover, research should expand the literature regarding BDSM-identification as a sexual orientation and as a concealable stigmatized identity, given the similarities in psychological and behavioral functioning. Gaining a greater understanding of BDSM and those who practice it is a first step toward reducing the stigmatization and marginalization that BDSM practitioners face in and outside of academic research.

### Conclusion

The present study provides a novel approach to studying BDSM populations by applying text analysis to participant-produced romantic and erotic narratives. By using a data-driven approach to model selection we explored how language, roles, and individual differences fit together among a sample of diverse sexual identities. Results support previous findings that BDSM practitioners exhibit less neuroticism and more sensationalism compared to non-practitioners. Moreover, participants' language mirrored D/s role attributes, with Dominants exhibiting possessiveness, caregiving, and

other-focus, and submissives referencing power dynamics and self-focus. The present study diversifies the extant literature by uniquely evaluating identities, behaviors, and personality attributes of BDSM practitioners through language. Moreover, our findings lend support to destigmatizing and improving representation of this marginalized sexual minority community.

### Disclosure Statement

No potential conflict of interest was reported by the authors.

### Funding

This work was supported in part by left over monies from the Texas Tech University Summer Thesis/Dissertation Research Award. The funder was not involved in the conduct of the research.

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### Disclaimer

Other data, using the full dataset and responses from a different set of measures, have been submitted for publication elsewhere.

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