1   Moral Foundations of U.S. Political News Organizations

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11   Abstract

12   The media ecosystem has grown, and political opinions have diverged such that there are

13   competing conceptions of objective truth. Commentators often point to political biases in

14   news coverage as a catalyst for this political divide. The Moral Foundations Dictionary

15   (MFD) facilitates identification of ideological leanings in text through frequency of the

16   occurrence of certain words. Through web scraping, the researchers extracted articles from

17   popular news sources' websites, calculated MFD word frequencies, and identified words'

18   respective valences. This process attempts to uncover news outlets' positive or negative

19   endorsements of certain moral dimensions concomitant with a particular ideology. In

20   Experiment 1, the researchers gathered poltical articles from four sources. They were unable

21   to reveal significant differences in moral or political endorsements, but they solidified the

22   method to be employed in further research. In Experiment 2, the researchers will expand

23   their number of sources to 10 and will analyze articles that pertain to the 2018 confirmation

24   hearings of U.S. Supreme Court Justice Brett Kavanaugh. This topic was selected due to the

25   moral disputes associated with his nomination.

26   *Keywords:* politics, morality, psycholinguistics

Moral Foundations of U.S. Political News Organizations

In the United States, today's media landscape affords consumers a multitude of options for obtaining political news. Since the advent of cable news networks and the World Wide Web in the last decades of the twentieth century, consumers have gained access to an ever-expanding menagerie of news sources, many of which can be called up via a simple click, touch, or swipe. Concurrent with this growth in available news sources, concerns regarding political bias in news reporting have entered public consciousness. For example, commentators argue that networks including Fox News Channel and MSNBC communicate political news from a conservative and liberal slant, respectively. These purported biases have been a cause for concern given the potential for incomplete or inaccurate news reporting potentially resulting from these biases. Given the inherently moral nature of many political arguments and positions, bias in news reporting might manifest as differing moral appeals. Specifically, the use of differing moral language in political articles might be an indicator of political bias in news media.

Morality and ethics have been of interest to thinkers, academics, and philosophers since antiquity. Starting chiefly in the twentieth century, a scientific approach to humans' understanding of morality emerged under the domain of psychology. Theories attempting to explain the development and application of people's moral intuitions built the foundation for the subfield of moral psychology. As the field developed, however, considerable debate has taken place regarding operational definitions of "morality." Concerns regarding operationalization remain an issue in the field in the twenty-first century as researchers attempt to infer moral and political leanings from text and speech.

Moral Foundations Theory

As a discipline, modern moral psychology started in the late 1960s with Lawrence Kohlberg (Haidt & Graham, 2007). Kohlberg's research popularized his theory of the development of moral reasoning. This theory establishes the steps of moral reasoning through which humans proceed as their cognitive structures assume higher levels of sophistication and nuance (Kohlberg & Hersh, 1977). Kohlberg borrowed from Jean Piaget's stages of cognitive development in which children progress from the sensorimotor through to the formal operations stage. Similarly, Kohlberg found people typically start with a "pre-conventional" understanding of morality during infancy in which children understand "right" and "wrong" purely in terms of how they interact with resultant experiences of rewards and punishment. Typically, people progress through several steps until they reach a "post-conventional" ethics. People who have reached the post-conventional stage are said to be able to weigh competing abstractions and reason their way to a conclusion that promotes justice based upon their "self-chosen ethical principles" (Kohlberg & Hersh, 1977). From Kohlberg's perspective, issues of justice and fairness comprise the foundation of morality (Haidt & Graham, 2007). This view persisted until it encountered criticism in the early 1980s.

Kohlberg's conception of morality faced major scrutiny from psychologist Carol Gilligan. In 1982, Gilligan criticized Kohlberg's theory on the grounds that it focused solely on the moral concerns of men, and that it ignored those of women (Haidt & Graham, 2007). Gilligan drew attention to purported differences in the ways men and women are taught to relate to self and others. She offered a historic argument contending women have traditionally filled roles related to caring and nurturing. She pushes back against Kohlberg's assumption that moral development replaces "rule of brute force," as enforced by men, with the justice-based "rule of law." According to Gilligan, this assumption implies women are less morally developed, owing to their absence both in masculine displays of violence as well as in enforcement of the law (Gilligan, 1982). Gilligan argues for the existence of a distinct,

but equal development process that women and girls must undergo in order to develop their

moral selves. Stark differences in the ways women are traditionally taught to interact with

their social world cause them to develop ethical systems based upon their non-aggressive

relationships with others. Gilligan thus asserted morality was built upon an alternative

moral foundation: caring (Gilligan, 1982). This debate between competing conceptions of

morality did not resolve until Gilligan and Kohlberg conceded the existence of two moral

foundations: justice and caring (Haidt & Graham, 2007). While this new direction in moral

psychology appeared to represent a more inclusive outlook on the construct, these novel

ideas would soon be challenged on the grounds of its apparent western-centric outlook.

Jonathan Haidt and Jesse Graham formulated Moral Foundations Theory as a method

by which to capture the entirety of humans' moral domain (Haidt & Graham, 2007). The

researchers argued older theories of moral psychology were focused primarily on issues of

justice, fairness, and caring - individually focused foundations of morality that align with the

beliefs of political liberals (Haidt & Graham, 2007). In other words, moral psychology

ignored the valid moral foundations of conservatives. Moral Foundations Theory (MFT)

holds that people's moral domain can be mapped by quantifying their endorsement of five

moral foundations: *harm/care*, *fairness/reciprocity*, *ingroup/loyalty*, *authority/respect*, and

purity/sanctity (Haidt & Graham, 2007).

In their brief overview of the history of moral psychology, Graham, Haidt, and Nosek

(2009) explained Shweder, Much, Mahapatra, and Park's objections to moral psychology as it

stood in the late 1980s. Their criticism centered on the fact moral psychology concerned

itself with issues regarding justice and individuals' rights. Such a system, they argued, did

not account for moral concerns outside of the western world (Graham et al., 2009).

Individually focused concerns can be grouped under an overarching "ethic of autonomy,"

which was thought to be one of three ethics upon which humans base moral decisions. The

other two ethics were the "ethic of community" (comprising one's duty to their family, tribe,

etc.), and the "ethic of divinity"" - representing one's duty not to defile their God-given body and soul (Graham et al., 2009). In the 2000s, Haidt and Graham (2007) took this line of reasoning further in their assertion that moral psychology favored certain political ideologies over others.

Haidt and Graham settled on these specific foundations after the completion of a literature survey of research in anthropology and evolutionary psychology (Graham et al., 2011). The researchers attempted to locate virtues and morals corresponding to "evolutionary thinking." For instance, the researchers cited Mauss' work on reciprocal gift-giving, which informed the establishment of the *fairness/reciprocity* foundation. Additionally, evolutionary literature on disgust and its correlation to human behavior regarding food and sex informed the *purity/sanctity* foundation (Graham et al., 2011). The researchers identified the five "top candidates" for the foundations of human cultures' morality (Graham et al., 2011).

The first two foundations (*harm/care* and *fairness/reciprocity*) are termed the "individualizing foundations," as they are centered on the concerns of individuals rather than groups. *Harm/care* represents an endorsement of compassion and kindness, while opposing cruelty and harm. *Fairness/reciprocity* represents concerns centered on guaranteeing individual rights as well as justice and equality among all people. The other three foundations (*ingroup/loyalty*, *authority/respect*, and *purity/sanctity*) are the "binding" foundations, owing to their focus on group-related concerns, rather than those of individuals. *Ingroup/loyalty* represents endorsements of patriotism and heroism and discourages nonconformity and dissent. *Authority/respect* represents an endorsement of social hierarchies and traditions while denigrating disobedience. Finally, *purity/sanctity* represents concerns regarding chastity and piety, while discouraging vices and indulgences, including lust, avarice, and gluttony (Haidt & Graham, 2007). Liberals tend to endorse the individualizing foundations more than conservatives. Conservatives, on the other hand, tend to endorse the

binding foundations more than liberals. It should be noted, however, conservatives also tend to endorse all five foundations equally, implying they base moral judgments on all foundations (Graham et al., 2009).

Moral Foundations Dictionary

In order to capture language's role in moral and political reasoning, Graham et al. (2009) formulated the Moral Foundations Dictionary (MFD) in order to capture moral reasoning and justification as used in speech and text. The MFD is composed of 259 words, with around 50 words assigned to each of the five foundations. The researchers created a preliminary list of words that they believed would be associated with the five foundations. Then, using the Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Frances, 2007) computer program, they analyzed transcripts of liberal and conservative Christian sermons in order to obtain frequencies of the occurrence of words from the researchers' initial list. The researchers manually checked the results from LIWC in order to make sure the results make sense given the contexts and rhetorical devices used in the sermons, as word frequency analysis ignores sentence context. The researchers offered the following example from a Unitarian sermon as a demonstration of ambiguous statements requiring human verification: "Don't let some self-interested ecclesiastical or government authority tell you what to believe, but read the Bible with your own eyes and open your heart directly to Jesus" (Graham et al., 2009). This sentence added to the *authority/respect* total in LIWC's analysis, but it appears to suggest that one should reject authority in this context. The researchers eliminated this sentence from the *authority/respect* raw count on account of this discrepancy between the use of authority-related words and the speaker's clear intentions (Graham et al., 2009).

Similar to previous research on Moral Foundations Theory, liberal ministers used *harm*, *fairness*, and *ingroup* words more often than conservative ministers. Conversely, conservative

¹⁵² ministers used *authority* and *purity* words more often than liberal ministers. However,

¹⁵³ conservative ministers did not use *ingroup/loyalty* words more than liberals. Rather, liberal

¹⁵⁴ ministers used words pertaining to *ingroup/loyalty*, but in contexts that promote rebellion

¹⁵⁵ and independence - causes *opposite* to positive endorsements of that foundation (Graham et

¹⁵⁶ al., 2009).

¹⁵⁷   To this point, most text analysis utilizing the Moral Foundations Dictionary

¹⁵⁸ operationalizes endorsement of any one of the foundations as percent occurrence of words in

¹⁵⁹ a given text from the foundation's respective word list. As such, most analyses assume that

¹⁶⁰ zero percent occurrence is indicative of no endorsement, while any non-zero percent

¹⁶¹ occurrence indicates endorsement of the foundation. This operational definition may not be

¹⁶² sufficient in describing the true nature of the writer or speaker's endorsement of one of the

¹⁶³ sets of moral intuitions. A quick glance at the MFD words for *harm/care* reveals the

¹⁶⁴ presence of words that are more closely associated with universally accepted conceptions of

¹⁶⁵ *harm* over *care* and vice-versa (Graham et al., 2009). For example, the word "cruel" has

¹⁶⁶ relatively negative connotations compared to "benefit." For the *harm/care* foundation, it is

¹⁶⁷ conceivable that use of the word "cruel" might indicate a greater attentional focus of the

¹⁶⁸ idea of *harm* rather than *care*.

¹⁶⁹   For *harm/care*, the definition of the foundation, as well as its name, clearly

¹⁷⁰ distinguishes between two somewhat opposite sides of an attentional continuum, with *harm*

¹⁷¹ on the negative end and *care* on the positive side. In other words, the entries in the MFD for

¹⁷² *harm/care* have somewhat clear positive and negative valences. The same pattern can be

¹⁷³ seen in the MFD entries for the other four foundations. *Purity/sanctity* features words that

¹⁷⁴ likely have a negative valence to most observers, including "disease"" and "trash," along with

¹⁷⁵ more positive words, including "right" and "sacred" (Graham et al., 2009). These

¹⁷⁶ dichotomies, however, bring up other questions regarding the definition and names of the

¹⁷⁷ other four foundations apart from *harm/care*: *fairness/reciprocity*, *ingroup/loyalty*,

authority/respect, and *purity/sanctity*. The latter four foundations have names that are harder to understand as a valence continuum, as the concepts in the names are more similar, even to the point of being virtually synonymous in the case of *fairness/reciprocity*.

When considering the issue of positive versus negative valence in MFD words, the question of how texts are analyzed vis-a-vis the MFD remains. How can raw percentage of MFD word occurrence capture the valence and focus of the writer or speaker? If 2% of a politician's speech features positive words (i.e., "benefit" and "defend") from the MFD *harm/care* list, how can researchers be sure the level and nature of the speaker's "endorsement" of the foundation equals that of another politician whose speech contained negatively connoted MFD words from the *harm/care* list? They would have equal endorsements as far as the numbers are concerned, but the words used and focus given are on opposite sides of the *harm/care* spectrum.

This issue is compounded by the fact the Moral Foundations Questionnaire (MFQ) and its subscales assume endorsement lies on a continuum. The Moral Foundations Questionnaire (MFQ), which was developed subsequent to the MFD, measures individuals' endorsements of each of the foundations using a six-point scale (Graham et al., 2011). The questionnaire is made up of judgment items and relevance items. Judgment items are phrased such that the respondent signals their agreement or disagreement with straightforward statements. An example of such a statement reads: "It can never be right to kill another human being" (Graham et al., 2011). Relevance items gauge the respondent's opinion regarding the importance of foundation-related concerns. For example, the respondent is directed to rate how important the following situation is to their sense of morals: "whether or not someone did something disgusting." This example measures the relevance of the *purity/sanctity* foundations. Each foundation has a judgment and relevance subscale, totaling 10 subscales for the MFQ (Graham et al., 2011).

The aforementioned ambiguity of the Moral Foundations Dictionary as an instrument

²⁰⁴ becomes clearer upon closer examination of the items in the Moral Foundations

²⁰⁵ Questionnaire. One item under the *fairness/reciprocity* judgment subscale reads, "Justice is

²⁰⁶ the most important requirement for a society" (Graham et al., 2011). The survey respondent

²⁰⁷ must select a number on a scale from 1 to 6 indicating responses spanning "strongly

²⁰⁸ disagree" at 1 to "strongly agree" at 6. While the scales in the MFQ do not represent true

²⁰⁹ valence as it pertains to individual words, it does allow for a greater degree of specificity in

²¹⁰ terms of an individual's endorsement of a particular moral foundation. When a respondent

²¹¹ selects a 4 for the aforementioned MFQ statement, they clearly are indicating they "slightly

²¹² agree" with the statement (Graham et al., 2011). This specificity is not present in most

²¹³ analyses involving the MFD and percent occurrence, unless they also take into account the

²¹⁴ valence of the words used in the text or speech of interest.

²¹⁵ **Valence**

²¹⁶   Borrowing from Osgood's work in the 1950s, Bradley and Lang (1999) recognized

²¹⁷ valence as one of three related dimensions comprising emotion when developing their

²¹⁸ Affective Norms for English Words (ANEW). As mentioned before, "valence," the first

²¹⁹ dimension, denotes the pleasantness of a given word. "Arousal," the second dimension,

²²⁰ describes the stimulating nature of a word. Lastly, "dominance" or "control" describes the

²²¹ extent to which a word makes one feel in or out of control (Bradley & Lang, 1999). The

²²² researchers developed ANEW by presenting participants with a list of 100-150 words and

²²³ asking for them to rate the word on all three dimensions using the Self-Assessment Mannikin

²²⁴ (SAM), which allows ratings along either a nine-point scale when using traditional paper

²²⁵ instruments or a twenty-point scale when using a computerized version.

²²⁶   Participants saw the stimulus word and responded on each scale. The valence scale

²²⁷ featured a smiling figure at one end (representing pleasantness) and a frowning figure at the

²²⁸ other end (for unpleasantness). The arousal scale had a "wide-eyed" figure at one end with a

sleepy figure at the other, representing stimulating and unstimulating respectively. Finally, the dominance scale featured a large figure, indicating the highest degree of control, at one end and a small figure, indicating a lack of control, at the other end (Bradley & Lang, 1999). The end result of this procedure yielded affective norms along the three dimensions for 1,040 English words (Bradley & Lang, 1999). ANEW represented an important first step in establishing affective norms for large numbers of English words. However, later researchers found the 1,040-word list to be limiting for a language consisting of thousands of words.

Warriner, Kuperman, and Brysbaert (2013) exponentially lengthened the list of words with affective norms to 13,915 English lemmas, the base forms of words without inflection (i.e., "watch" rather than "watched" and "watching"). The researchers recognized the importance of affective norms in several areas of study, including emotion, language processing, and memory (Warriner et al., 2013). They argue the list of words included in ANEW is sufficient for small-scale factorial research designs, but the list is "prohibitively small" for larger-scale "megastudies" that are common in psycholinguistic research today (Warriner et al., 2013).

In order to source a large number of lemmas for affective ratings, the researchers drew from several validated sources. These include the 30,000 lemmas with age-of-acquisition (average age at which a particular word is learned) ratings gathered by Kuperman, Stadthagen-Gonzalez, and Brysbaert (2012) as well as the content lemmas from the SUBTLEX-US corpus consisting of subtitles from various forms of visual media (New, Brysbaert, Veronis, & Pallier, 2007). This data collection resulted in the final list of 13,915 lemmas. Lists of 346-350 words were presented to participants recruited through the Amazon Mechanical Turk subject pool. Participants rated the words along one of the three dimensions, unlike the ANEW project in which participants rated each word along all three dimensions at once. The researchers used a nine-point scale similar to the one used by Bradley and Lang (1999) when collecting ratings for ANEW (Warriner et al., 2013).

255   The researchers noted several points of interest upon observing ratings. First, they

256 found that valence and dominance ratings had a negative skew, indicating more words

257 elicited feelings of happiness and control than their respective opposites. Also, when

258 examining the relationship between valence and arousal ratings, the researchers found a

259 U-shaped relationship. This U-shape indicates words with high degrees of positivity and

260 negativity elicited higher arousal (Warriner et al., 2013). These observations along with the

261 now-greatly expanded list of affective norms has been applied to several lines of inquiry in

262 psycholinguistics.

263   Warriner and Kuperman (2015) utilized the new affective norms list in order to

264 investigate the validity of the Pollyanna hypothesis, or the prevalence of a generally

265 optimistic outlook in humans as reflected in language. The researchers were able to conclude

266 the existence of a greater number of positive-valence English words in the list of 13,915

267 lemmas. Additionally, after observing token frequency in a number of text corpora, including

268 SUBTLEX-US, the Corpus for Contemporary American English (COCA), the British

269 National Corpus (BNC), Touchstone Applied Science Associates, Inc. Corpus (TASA), and

270 the corpus used for the Hyperspace Analogue to Language model (HAL), the researchers

271 found that words with positive valence were also used more frequently (Warriner &

272 Kuperman, 2015). While the researchers concede the possibility of an acquiescence bias in

273 ratings as a possible explanation for the observed positivity bias, this investigation represents

274 one application of the Warriner et al. (2013) list in emotional studies.

275   In addition to applications in emotion research, the Warriner et al. (2013) norms have

276 been utilized in cognitive research as well. One cognition-based study investigates the

277 relationship between emotion and response latencies in word recognition. Kuperman, Estes,

278 Brysbaert, and Warriner (2014) sought to use these new norms to fill in the knowledge gaps

279 regarding variance in word recognition. The researchers drew several conclusions regarding

280 emotion and word recognition (specifically in naming and lexical decision tasks - two

281 cognitive processing tasks wherein a participant has to read aloud or judge a word for its

282 lexicality). First, Kuperman et al. (2014) found slower decision-making and reading times in

283 negative-valence words, faster times in neutral words, and even faster times in words with

284 positive valence. The researchers also concluded that words causing higher arousal tend to

285 have slower decision times than less-arousing words. They found valence had a stronger

286 effect on recognition than arousal (both effects were independent, not interactive). They

287 found an interaction between emotion and word frequency such that valence and arousal are

288 more effective on lower frequency words than high frequency words. Finally, Kuperman et al.

289 (2014) found a greater effect of valence and arousal on response latency for lexical decision

290 tasks than for naming tasks (Kuperman et al., 2014). This research serves as further

291 evidence that the Warriner et al. (2013) list can be used for research inquiries both within

292 and without the field of psycholinguistics.

293   In the present studies, the researchers used the Warriner et al. (2013) list in order to

294 denote the valence of the words appearing in the news articles scraped from the internet.

295 Valence was considered as another independent variable and its relationship with the words

296 comprising the Moral Foundations Dictionary were of chief interest to the researchers. The

297 valence was used as a means to determine whether individual words in the MFD represented

298 more positive aspects of their respective foundation or if they denoted a more negative

299 aspect of the foundation. Specifically, valences were used to weight the MFD words by their

300 relative degree of positivity or negativity. Incorporating word valence into a study involving

301 the MFD is meant to alleviate some of the issues regarding the aforementioned ambiguity

302 regarding the words in the Moral Foundations Dictionary.

303 **News Media and Politics**

304   Research into politics, language, and media has illuminated the complex relationships

305 between all three. Any politically-oriented discussion of word occurrence as an implication of

306 moral or political position assumes that language and ideology are intrinsically linked.

307 Deborah Cameron (2006) points out the expressive nature of ideological beliefs and how that

308 expression is conveyed through language, thus implying a connection between ideology and

309 language. She goes on to criticize the notion that language is either the "pre-existing raw

310 material" used to shape ideologies or the "post-hoc vehicle" for their propagation. Rather,

311 the structure of language itself is shaped by ideology and social processes even when it is used

312 to explain or express ideologies (Cameron, 2006). Owing to the fact the Moral Foundations

313 Dictionary was developed in order to assess the moral, which includes the ideological,

314 orientation of discourse, its purported ability to assess parts of the structure of language

315 (vocabulary) for ideological lean is of chief interest to the researchers in the present study.

316   The use of language both to express and further an ideological goal has been

317 documented in the techniques employed by candidates for political office in the U.S.,

318 Druckman, Jacobs, and Ostermeier (2004) considered political "issues" as communication

319 that attempts to persuade constituents to vote for the candidates based on their strengths in

320 matters of public policy. According to the researchers, "image" priming describes techniques

321 deployed in order to sway votes based on favorable aspects of the candidate's behavior and

322 personality (Druckman et al., 2004). The researchers investigated political issue and image

323 priming on the part of candidates as implied by the disproportionate attention candidates

324 paid to particular issues over others. The researchers found numerous examples of issue and

325 image priming during the 1972 re-election campaign of Richard Nixon.

326   They linked the Nixon administration's awareness of the issues for which the president

327 had public support to the issues he should emphasize (and prime) during the campaign.

328 Likewise the researchers found evidence that Nixon's team was aware of negative evaluations

329 of his warmth and trustworthiness, and thus took steps to prime his purportedly positive

330 qualities, including strength and competence (Druckman et al., 2004). The researchers also

331 cited research from Iyengar and Kinder (1987) suggesting the news media affected

³³² perceptions of President Jimmy Carter's competence by emphasizing (e.g., priming) issues

³³³ related to energy, defense, and the economy. This focus implies news media may contribute

³³⁴ to Americans' perception of politicians based on where the media places emphasis.

³³⁵   There is a potential caveat regarding the validity of Druckman et al. (2004)'s findings:

³³⁶ reproductions of several studies purporting to demonstrate social priming effects have failed

³³⁷ to replicate the original results. Pashler, Coburn, and Harris (2012) point out the distinction

³³⁸ between perceptual and social (or goal) priming both in their operational definitions as well

³³⁹ as their replicability. Perceptual priming often works through the inducement of a certain

³⁴⁰ response from a related prime, as in, for example, semantic priming. Social (or goal) priming

³⁴¹ encompasses phenomena by which people exhibit complex behavioral changes subsequent to

³⁴² exposure to a prime. Pashler et al. (2012) point out well-known studies investigating social

³⁴³ priming, including the use of elderly-related primes to induce slower walking speeds in

³⁴⁴ participants. Studies investigating perceptual priming have been "directly replicated in

³⁴⁵ hundreds of labs" (Pashler et al., 2012). This replication rate does not appear to be the case

³⁴⁶ for social priming, as argued by Pashler et al. (2012).

³⁴⁷   Pashler et al. (2012) noticed the unusually large effect size values (Cohen's *d*) reported

³⁴⁸ by researchers studying social priming effects. The researchers reproduced two studies from

³⁴⁹ Williams and Bargh (2008) The first study attempted to prime participants by having them

³⁵⁰ plot points on a Cartesian grid. The independent variable was priming condition and

³⁵¹ contained three levels: short, middle, and long distance. Those instructed to plot points

³⁵² further apart were hypothesized to express a higher degree of psychological distance

³⁵³ regarding their family. The second study used the same priming conditions, but hypothesized

³⁵⁴ that greater distance between points would prime participants to estimate fewer calories in

³⁵⁵ unhealthy foods than those who were primed with shorter distances between points. Pashler

³⁵⁶ et al. (2012) concluded those two studies from Williams and Bargh (2008) held little validity

³⁵⁷ while also casting doubt on the prevalence of social priming effects themselves, based on the

358 inability of other researchers to replicate previously reported effects in this area.

359 While these concerns regarding the replication of social priming studies are valid and

360 deserve further investigation, Druckman et al. (2004) does not purport to demonstrate a

361 widespread effect of social priming on the American electorate. In other words, this reseach

362 makes no claim to empirically supported priming effects. Rather, Druckman et al. (2004)

363 chronicle the efforts on the part of the Nixon Administration to prop up the president's

364 supposed strengths while downplaying his weaknesses. These tactics were deployed through

365 the careful use of language in order to achieve the administration's political goals. As such,

366 Druckman et al. (2004)'s research on Nixon serves as an example of language's potential

367 utility in the propogation of desirable political opinions. The researcher's investigation of

368 news media's focus on specific issues during the Carter Administration likewise provide an

369 example of language as a potential conduit for the transfer of politically biased information.

370 The idea that even 1970s news media could contain political biases is of particular interest to

371 the current study, which investigates similar phenomena in contemporary news media.

372 Other research into news media suggests certain media outlets, at least indirectly, may

373 have an effect on the voting records of representatives in Congress (Clinton & Enamorado,

374 2014). Specifically, the researchers identified a pattern of declining support for President Bill

375 Clinton's policies chiefly among Republicans in the House of Representatives after the Fox

376 News Channel began broadcasting on cable and satellite systems in their respective districts.

377 As Fox News was, at the time of its launch in 1996, the only outwardly ideological national

378 news network, the researchers were able to track its spread across the country and observe

379 voting records of members of Congress both before and after Fox News' arrival. The

380 researchers concluded that members of Congress, excluding those newly elected at the time

381 of Fox News Channel's emergence, attempted to anticipate resultant conservative-leaning

382 shifts among their constituents by bolstering their conservative voting record before the next

383 election (Clinton & Enamorado, 2014).

384 Therefore, the current study sought to combine both methods related questions and

385 extension/replication of previous moral foundation results found for liberal and conservative

386 sources. First, the MFD was combined with previous research by the current authors (see

387 below) and weighted by valence to create weighted percentages to better specify

388 endorsement. Second, these weighted percentages were examined for their differences in

389 across liberal and conservative news sources.

390 ## Experiment 1

391 ## Method

392 For Experiment 1, the researchers approached the study with the intention to answer a

393 method question. That is, this portion of the current research was conducted in order to

394 solidify the best method by which to analyze political news text under the Moral

395 Foundations Theory framework while also alleviating some of the aforementioned valence

396 problem observed in the Moral Foundations Dictionary. The researchers hypothesized the

397 news sources genrally perceived as liberal leaning (*NPR* and *The New York Times*) would

398 contain MFD words and valences indicating endorsements of the individualizing moral

399 foundations (*harm/care* and *fairness/reciprocity*). Additionally, the researchers hypothesized

400 the two sources generally perceived to be conservative leaning (*Fox News* and *Breitbart*)

401 would feature MFD words and valences indicating equal endorsement of all five foundations.

402 **Sources**

403 Political articles were collected from the websites of four notable U.S. news sources, a

404 process known as web scraping. The sources were *The New York Times*, *National Public*

405 *Radio (NPR)*, *Fox News*, and *Breitbart.* They were selected for their widespread recognition

406 and the fact they are easily categorized (by the general public) according to perceived

political lean. In general, *The New York Times* and *NPR* are perceived by many to have a

liberal bias or lean. In contrast, Fox News and Breitbart are believed to have a conservative

bias or lean (Mitchell, Matsa, Gottfried, & Kiley, 2014). Political articles in particular were

identified and subsequently scraped by including the specific URL directing to each source's

political content in the *R* script. For example, rather than scrape from nytimes.com, which

would return undesired results (non-political features, reviews, etc.), we instead included

nytimes.com/section/politics so that more or less exclusively political content was obtained.

All code for this manuscript can be found at https://osf.io/5kpj7/, and the scripts are

provided inline with this manuscript written with the *papaja* library (Aust & Barth, 2017).

Identification of the sources' political URLs presented a problem for two of the sources

owing to complications with how their particular sites were structured. While in the

multi-week process of scraping articles, we noticed word counts for *NPR* and *Fox News* were

not growing at a similar pace as those from *The New York Times* and *Breitbart.* Upon

investigation, we found another, more robust URL for political content from NPR: their

politics content "archive." The page structure on NPR's website was such that only a limited

selection of articles is displayed to the user at a given time. Scraping both the archive and

the normal politics page ensured we were obtaining most (if not all) new articles as they

were published. We later ran a process in order to exclude any duplicate articles. *Fox News*

presented a similar issue. We discovered *Fox News* utilized six URLs in addition to the

regular politics page. These URLs led to pages containing content pertaining the U.S.

Executive Branch, Senate, House of Representatives, Judicial Branch, foreign policy, and

elections. Once again, duplicates were subsequently eliminated from any analyses.

Materials

Using the *rvest* library in the statistical package *R*, we pulled body text for individual

articles from each of the aforementioned sources (identified using CSS language) and

432 compiled them into a dataset (Wickham, 2016). Using this dataset, we identified word count

433 and average word count per source. This process was run once daily starting in February

434 2018 until March 2018. Starting in mid-March 2018, the process was run twice daily - once

435 in the morning and again in the evening. Data collection was terminated once 250,000 words

436 per source was collected in April 2018.

Data analysis

438   Once data collection ended, the text was scanned using the *ngram* package in *R*

439 (Schmidt, Gonzalez-Cabrera, & Tomasello, 2017). This package includes a word count

440 function, which was used to remove articles that came through as blank text, as well as to

441 eliminate text picked up from the Disqus commenting system used by certain websites. At

442 this point, duplicate articles were discarded.

443   The article text was processed using the *tm* and *ngram* packages in *R* in order to

444 render the text in lowercase, remove punctuation, and fix spacing issues (Feinerer & Hornik,

445 2017). The individual words were then reduced to their stems (i.e., *abused* was stemmed to

446 *abus*). The same procedure was applied to the MFD words and the words in the Warriner et

447 al. (2013) dataset. Using the Warriner et al. (2013) dictionary, the words making up each of

448 the five foundations in the MFD were matched to their respective valence value.

449   Concurrent research by Jordan, Buchanan, and Padfield (2019) is assessing the validity

450 of both the Moral Foundations Questionnaire and the Moral Foundations Dictionary through

451 a multi-trait multi-method analysis of the two instruments using multiple samples. The

452 instruments and foundation areas are being analyzed against one another, in order to test

453 reliability, as well as against the Congressional Record in order to test predictive validity for

454 political orientation. The researchers were able to identify a number of potential new words

455 that, if added to the MFD, could comprise a dictionary with greater validity, and less

likelihood of zero percent texts, as this often occurs with the current MFD. Those results have informed this analysis, and their updated findings may change the underlying dictionary used in this analysis (albeit, we do not expect any changes in the results presented below).

The source article words were compiled into a dataset where they were matched up with their counterparts in the MFD along with their valence and a percentage of their occurrence. Therefore, for each article, the percentage of the number of *harm/care* words occurring in the articles were calculated, and this process was repeated for each of the foundations. Words' percent occurence were multiplied by their *z*-scored valence. Valences were *z*-scored in order to eliminate any ambiguity regarding the direction of the valence. Positive values indicate positive valence, and negative values indicate negative valence. Words were categorized in accordance to their MFD affiliation, creating a weighted sum for each moral foundation.

Results

To analyze if news sources adhered to differences in word use based on their target audience, we utilized a multilevel model (MLM) to analyze the data. MLM is a regression technique that allows one to control for the repeated measurement and nested structured of the data, which creates correlated error (Gelman, 2006). Using the *nlme* library in *R* (Pinheiro, Bates, Debroy, Sarkar, & Team, 2017), each foundation's weighted percentage was predicated here by the political lean of the news source, using the individual news sources as a random intercept to control for the structure of the data.

The multilevel model did not indicate the presence of any significant or practical effect of political lean for any of the five moral foundations. The strongest effect size was observed for the *authority/respect* foundation, but the effect was in the opposite direction from what was originally hypothesized - liberal sources tended to use more *authority/respect* words than

did conservative sources. Descriptive and test statistics, *p*-values and effect sizes (Cohen's *d*) can be found in Table 1. To interpret the weighted scores, one can examine the mean and standard deviations for each. A zero score for the mean, with a non-zero standard deviation, would indicate a perfect balance of positive and negative words in each category, likely representing a neutral tone when all words are considered. Negative percentages would indicate more representation of the negative words in the MFD area, while positive percentages indicate an endorsement of the positive words in a MFD. Therefore, we suggest using the sign of the mean score to determine the directionality of the endorsement for the MFD (positive, neutral, negative), and the standard deviation to ensure that a zero score is not zero endorsement (i.e., a SD of zero indicates no words were used). Based on the weighted percent values for the five foundations, the researchers observed that MFD words seem to make up a small portion of the article text. Furthermore, the observed percentages and means appear to indicate a generally positive endorsement of all five foundations across both liberal and conservative sources.

Discussion

The results obtained in Experiment 1 did not confirm the hypothesis. The researchers found little compelling evidence of an effect of partisan lean on MFD endorsement. The strongest effect found was for the *authority/respect* foundation owing to the fact its Cohen's *d* value was greater than the other four foundations. However, the effect was in the opposite direction of that which was hypothesized. Specifically, the results indicated that liberal leaning sources demonstrated higher positivity regarding that foundation than conservatives. This result is contrary not only to the research hypothesis for Experiment 1 but also to previous findings in Moral Foundations Theory research. It should be noted, however, the effect size was small and the relationship was not found to be statistically significant.

Upon speculation, the researchers identified one possible reason for why the results

were unable to confirm the hypothesis. The selection of the broad and amorphous topic of "political news" may have led to the scraping of large numbers of articles with little to no moral-centric content. Rather, many articles may have been, for example, simple reporting on congressional procedures that would leave little room for the use of moral language here, let alone words from the Moral Foundations Dictionary. In short, the range of topics covered in Experiment 1 was likely too broad. The possibility exists that a tighter focus on one political issue or event, especially one that (on the surface) has a stronger relationship with morality might be more illuminating for research in moral language in news media.

Owing to the exploratory nature of Experiment 1, the researchers were afforded the opportunity to consider changes to the method to be utilized in Experiment 2. Generally speaking, the researchers believe their methodology to be sound. Web scraping methods and text processing remain viable methods for collecting large amounts of text and subsequently rendering that text in a form suitable for data analysis. Experiment 1 also demonstrated a method by which to address inherent problems in the Moral Foundations Dictionary relating to valence. The solution provided in Experiment 1 appears to provide insights into the MFD words where none previously existed. Finally, calculating weighted percentages and sums for each moral foundation provides an easily interpreted summary of MFD word positivity and occurence.

While the methodology used in Experiment 1 features many strengths, there are aspects which could be strengthened for future studies. The researchers identified two such changes that were subsequently employed in Experiment 2. First, the researchers elected to include more news sources for web scraping and analysis in addition to the four used in Experiment 1. Second, the researchers chose to focus their data collection efforts exclusively on one event in U.S. politics: the nomination and confirmation of Justice Brett Kavanaugh to the U.S. Supreme Court. In Experiment 2, the researchers sought to confirm the usefulness and validity of the method as well as test a similar hypothesis as Experiment 1.

Experiment 2

Kavanaugh Supreme Court Hearing

In the wake of Justice Anthony Kennedy's retirement from the Supreme Court of the

United States, President Donald Trump nominated Brett Kavanaugh as the new Associate

Justice. Kavanaugh was previously on the U.S. Court of Appeals for the District of

Columbia. The Senate Judiciary Committee began his confirmation hearing on September 4,

2018 (US Government, 2018a). Following allegations of sexual assault by high school

classmate Dr. Christine Blasey Ford, the committee postponed its vote on whether or not to

open the confirmation to the entire Senate.

On September 27, the committee questioned Dr. Ford before commencing a second

round of questioning for Judge Kavanaugh (US Government, 2018b). During the intervening

weeks between hearings, two more women came forward with two separate allegations of

sexual assault on the part of Kavanaugh. According to Nielsen reports, more than 20 million

people watched the September 27 proceedings on television (O'Connell, 2018). This figure

does not take into account viewers who watched online, nor does it account for viewers

outside the United States. On September 28, the Senate Judiciary Committee voted to send

the nomination to the Senate floor. Senator Jeff Flake of Arizona, however, lobbied for a

week-long FBI investigation on Kavanaugh and the allegations facing him, which the

committee, and later the President, approved. The investigation concluded with no

significant findings. The Senate voted 50-48 to approve Kavanaugh's appointment on

October 6, 2018 (US Government, 2018c).

The Kavanaugh nomination, confirmation hearing, and eventual swearing-in, as well as

the news media's coverage of all three events, feature many moral dimensions that likely

differ depending on one's morals. On one side of the debate, Kavanaugh's Supreme Court

tenure presents a prime opportunity to bring morality back into interpretation of the

556 Constitution. Kavanaugh's confirmation creates a conservative stronghold among the justices

557 on the court. Commentators have noted this might help advance a judicial agenda that

558 backpedals certain rights previously upheld by the Supreme Court, including abortion and

559 gay marriage - social issues challenged by their opponents at least partially on moral

560 grounds. On the other side of the debate, the assault allegations have energized Kavanaugh's

561 opponents to advocate for his rejection from the court owing to misdeeds resulting from

562 Kavanaugh's own alleged lack of morals. Additionally, the moral duty of the Senate as the

563 upper chamber in the U.S. legislature has been scrutinized in public discourse with respect

564 to its handling of the assault allegations vis-a-vis Kavanaugh's confirmation.

565 In contrast to Experiment 1, the researchers approached Experiment 2 with the

566 intention to confirm the method employed was valid for the analysis of the scraped text as

567 well as for any inferences drawn from the analyses. For Experiment 2, the researchers

568 hypothesized that news sources perceived as liberal will exhibit positive endorsements of the

569 individualizing moral foundations (*harm/care* and *fairness/reciprocity*) in their articles

570 reporting on the Kavanaugh confirmation hearing. News sources perceived as conservative

571 are hypothesized to positively endorse all five foundations equally in their coverage of the

572 Kavanaugh hearing. The researchers tested the hypothesis by analyzing the content scraped

573 from news sources' web pages during the two weeks before and two weeks after Kavanaugh's

574 confirmation, owing to its prominence in the news. The content will be analyzed for valence

575 and moral alignment under Moral Foundations Theory.

Method

Sources

578 Articles pertaining to the Brett Kavanaugh Supreme Court nomination and

579 confirmation were scraped from the websites of 12 U.S. news sources. These sources were

selected owing to their favorability among political partisans according to Mitchell et al. (2014). The sources favored by liberals were *The New York Times*, *National Public Radio (NPR)*, *Slate*, *Huffington Post*, and *Politico* (Mitchell et al., 2014). The sources favored by conservatives included *Fox News*, *Breitbart*, *The Rush Limbaugh Show*, *The Blaze*, and *Sean Hannity*. Political articles referencing Brett Kavanaugh's nomination process were identified and subsequently scraped by including the URL for each source's coverage of the nomination in the *R* script. All code for this manuscript can be found at https://osf.io/5kpj7/, and the scripts, again written with the *papaja* library in *R*, are provided inline with this manuscript (Aust & Barth, 2017).

Materials

Using the *rvest* library in the statistical package *R*, we pulled body text for individual articles from each of the aforementioned 10 news sources (identified using CSS language). We compiled the articles into a dataset (Wickham, 2016). Using this dataset, we identified word count and average word count per source. This process was run for articles pertaining to Kavanaugh's nomination that were published between September 13, 2018 and October 11, 2018 inclusive. This date range was selected in reference to the widely-publicized and viewed nomination hearing on September 27, 2018. We set the start date at September 13 (two weeks before the hearing) and the end date at October 11 (two weeks after the hearing) so that we could capture a large amount of data (roughly one month) during which Kavanaugh's nomination was at its peak saturation in news coverage.

Data analysis

As in Experiment 1, the text was scanned with *ngram*. Again, blank articles, text from the Disqus system, and duplicate articles were removed (Schmidt et al., 2017). The text was

603 processed and stemmed in order to convert to a usable form for further analysis (Feinerer &

604 Hornik, 2017). Words were subsequently matched with their valences from Warriner et al.

605 (2013). Depending on the results of Jordan et al. (2019)'s research, alternative forms of the

606 Moral Foudnations Dictionary may be imported instead of the original dictionary.

607   Using the *tm* and *ngram* packages in *R*, the researchers processed the text in order to

608 convert it to lowercase, fix spacing anomalies, and remove punctuation (Feinerer & Hornik,

609 2017). Each individual word was reduced to its stem (i.e., *diseased* was stemmed to *diseas*).

610 Once again, the same procedure was applied to the MFD words and the words in the

611 Warriner et al. (2013) dataset. Using the Warriner et al. (2013) dictionary, the words in the

612 MFD were assigned their respective valence. The researchers obtained the words' percent

613 occurence in the text. Once again, percents were multiplied by *z*-scored valence and

614 categorized into their proper MFD category.

615 <div align="center">**Experiment 2**</div>

616 **Results**

617 <div align="center">**Discussion**</div>

618 <div align="center">**Conclusions**</div>

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Table 1

Experiment 1 Results - Multilevel Model

Foundation	M_C	SD_C	M_L	SD_L	t	p	d
Harm/Care	0.50	2.21	0.49	2.21	-0.21	.850	0.01
Fairness/Reciprocity	1.13	1.38	1.11	1.38	-0.42	.715	0.02
Ingroup/Loyalty	1.28	1.63	1.34	1.63	0.30	.789	-0.04
Authority/Respect	0.72	1.62	1.06	1.62	3.17	.087	-0.20
Purity/Sanctity	1.11	1.48	1.27	1.48	2.37	.141	-0.09

Note. For mean and standard deviation values, 'C' and 'L' refer to 'conservative' and 'liberal,' respectively