Killer stance: An investigation of the relationship between attitudinal resources and psychological traits in the writings of four serial murderers

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Abstract. *An individual's set of psychological traits, or their psychopathology, impacts how they experience the world around them, and language offers resources that allow for that experience to be shared with and communicated to someone else. That language can then be analyzed for patterns and their connections to the psychological traits. In a forensic context, such connections may give valuable insights. There already exist psychological and linguistic approaches to the analysis of forensic texts, but the psychological approach largely lacks grounding in linguistic theory and the linguistic approach does not typically allow consideration of psychological characteristics. What this paper aims to provide is a step toward bridging that gap. In this paper we examine the system of attitude from the Appraisal framework developed by Martin and White (2005) and adapted by Gales (2010) and Hurt (2020) applying this to the writings of four serial murderers with documented mental health diagnoses. Significant patterns in the attitudinal resources were identified quantitatively and examined qualitatively through the lens of the psychological traits that comprised the authors' diagnoses to determine if there was a relationship between them. Despite the obvious limitation presented by the sample size, the results of this study suggest the approach presented in this paper warrants further investigation.*

Keywords: *Appraisal analysis, Stance, Psychopathology, Attitude, Serial murderers.*

Resumo. *O conjunto de características psicológicas de um indivíduo, a sua psicopatologia, tem impacto na forma como vivencia o mundo à sua volta, e a linguagem oferece recursos que permitem que essa experiência seja partilhada e comunicada a outra pessoa. Essa linguagem pode então ser analisada para identificar padrões e as suas ligações com os traços psicológicos. Em contextos forenses, essas ligações podem fornecer conhecimentos preciosos. Já existem abordagens psicológicas e linguísticas para análise de textos forenses, mas a abordagem psicológica carece em grande parte de fundamentação de teorias*

linguísticas e a abordagem linguística não permite normalmente considerar características psicológicas. Este artigo tem como objetivo avançar no sentido de colmatar essa lacuna. Nele analisamos o sistema de atitude, conforme grelha de avaliação desenvolvida por Martin and White (2005) e adaptado por Gales (2010) e por Hurt (2020), aplicando-o aos textos de quatro assassinos em série com diagnósticos de saúde mental documentados. Identificámos quantitativamente padrões significativos nos recursos de atitude, que analisámos qualitativamente à luz dos traços psicológicos identificados nos diagnósticos dos autores para avaliar a existência de uma relação entre eles. Apesar das óbvias limitações impostas pelo tamanho da amostra, os resultados deste estudo sugerem que a abordagem apresentada neste artigo merece uma investigação mais aprofundada.

Palavras-chave: *Análise de avaliação, Posicionamento, Psicopatologia, Atitude, Assassinos em série.*

Introduction

In Wichita, Kansas on the morning of January 15, 1974, Dennis Rader cut the phone line to the Otero family's home before entering (Slevin 2004). He bound and strangled the parents and killed the youngest two of the couple's five children; the three eldest later finding the bodies when they came home from school (Ott 2021). These four murders marked the beginning of a 31-year manhunt for Rader—who became known, infamously, as B.T.K., for Bind, Torture, Kill—during which time he committed six more murders and taunted the police and public with letters and messages claiming responsibility and demanding recognition for his crimes. During his trial, he was assessed by a psychiatrist who determined he met the diagnostic criteria for obsessive-compulsive disorder (OCD) and narcissistic personality disorder (NPD; Ramsland 2016). Rader, of course, is not the only serial murderer to send letters to law enforcement, but cases like his beg the question: was there evidence in his language choices of any of the traits that comprise the two diagnoses he received and what good would it have done if there was?

An individual's collective set of psychological traits, or their *psychopathology*, impacts how they interpret information and interact with the world and the people in it, which, in turn, influences myriad facets of their functioning. For instance—and perhaps what most would think of first—how they react to stimuli or their general behavioral patterns. However, what we are concerned with here is its influence on the perhaps less obvious facet of language. More specifically, how the influence of psychological traits on an individual's experience might be reflected in the linguistic choices made when describing and evaluating aspects of that experience—i.e., when expressing their *stances*. A person's *stance* conveys their "personal feelings, attitudes, value judgments, or assessments" about themselves and the people and things in their world (Biber *et al.* 1999: 966). In this sense an individual's language arguably represents an analyzable manifestation of their world view—a translation of their "internal thoughts and emotions into a form that others can understand" (Tausczik and Pennebaker 2010: 25). We contend, therefore, that through the examination of evaluative language choices we may identify connections between the linguistic resources used to express stances and the psychological traits that influence them.

Of course, the relationship between language and internal psychological processes is a complicated one and there is ongoing debate within the literature as to what linguistic

output actually reveals about cognition. Some have argued that certain features—e.g., cohesion, coherence, or frequency of lexical categories like emotion words—are indicative of aspects of mental health disorders such as symptom/trait severity or functional impairments (e.g., Buck and Penn 2015; Docherty *et al.* 1996; Gawda 2013; Rochester and Martin 1979). Others, like Edwards and Potter (1992), have argued that the relationship is less direct; language enables social interaction and linguistic choices reflect more the social goals of the speaker or writer in a given context than any underlying cognitive processes. The view adopted in this research lies somewhere in the middle; linguistic choices made when recounting experiences are sensitive to, and thus impacted by, numerous factors including situational ones like audience as well the psychological traits that influence those experiences (Bortolan 2019; Fine 2006).

There are many potential applications for stance analysis in forensic settings, such as the assessment of threats (e.g., Gales 2010, 2015) and pledges to harm Hurt (2020) or the analysis of cross-examinations of witnesses in assault trials (Gales and Solan 2017). However, what has yet to be considered is its potential value as a bridge between forensic psychological and forensic linguistic assessments of texts. Forensic psychological assessments often take little account of linguistic evidence as an insight into psychological states and traits and the consideration of psychological traits is generally seen as being beyond the scope of forensic linguistic analyses (Grant 2008). The aim of this research is to demonstrate how stance analysis might be implemented as a way to analyze language evidence for psychological information that is based in linguistic theory. It should be noted—stressed, even—that this research is **not** intended, nor would it be able, to be used by law enforcement to diagnose authors of forensic texts. The approach is designed to produce a linguistically-based account of the psychological *traits* of an author (which may or may not constitute a clinical disorder) that when combined with forensic psychological and linguistic assessments, could be used to help narrow a suspect pool.

The analysis aims to provide detailed account of stance-taking resources. Since stance can be realized at almost every level of language, it can be analyzed in a variety of ways. For example, corpus methods allow for tracking of grammatical stance markers (Biber *et al.* 1999)—such as adverbials or modals—across larger datasets (e.g., Gales 2010), while methods such as Appraisal Analysis (Martin and White 2005) allow for more fine-grained analyses on (typically) smaller datasets (e.g., Hurt and Grant 2019). In fact, it is precisely because it allows for such fine-grained analyses that Appraisal was chosen for this research. It offers a way to track in detail the types of feelings being expressed, at whom/what those feelings are directed, the level of commitment to them, and their intensity (Martin and White 2005). Our broader study engages in the spectrum of areas analyses offered by appraisal, but this paper focuses only on the system of *attitude*, which helps categorize the types of feelings expressed and the people and things at which they are directed.

We thus explore the patterns of resources employed by four infamous serial murderers in writings on the topics of crime, interpersonal relationships/interactions, and childhood memories and how those patterns relate to psychological traits associated with the mental health diagnoses they received.

Data

Selecting Authors

The data collection process began with the identification of authors through two broad selection criteria. The first was that they must be a convicted serial murderer with publicly available writings (e.g., as part of a biography). The second was that they must have a documented mental health diagnosis. This second criterion was included because it provided the most reliable way to remotely gather information on the author's psychological traits as the criteria used to make diagnoses necessarily detail the basic traits that comprise them (Association 2013).

Figure 1 details the four authors selected based on these criteria and the diagnoses they received alongside the source for this information. The official psychiatric reports for all four authors could not be found, but the source of the information for each either cites the original report or was written by the psychiatrist who did the assessment.

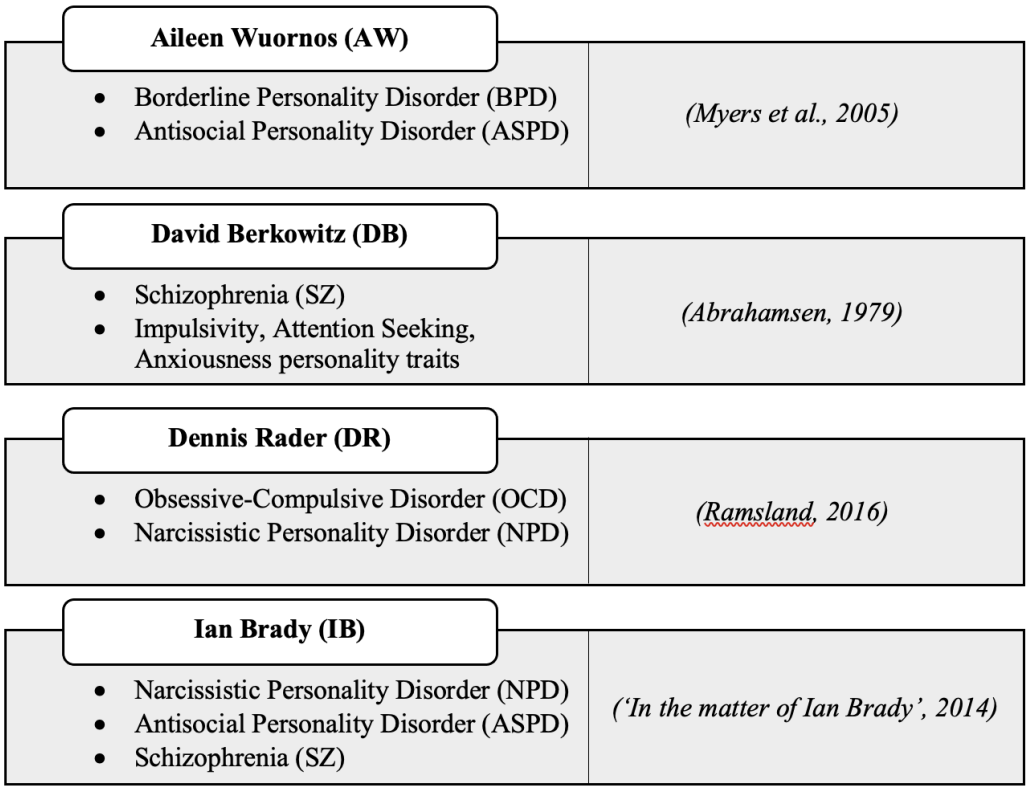

Figure 1. The authors and their diagnoses

Selecting Texts

Once the authors had been identified, the texts were selected from available writings. This meant there were limited choices and decisions about what potentially influential factors could be controlled for had to be made. It proved difficult to completely control for register variables like audience and mode of communication (Biber *et al.* 1999; Halliday and Matthiessen 2014), though efforts were made to limit the magnitude of the differences in these variables as much as possible. What could more easily be controlled for were the length, topic, and *genre* of the texts. *Genre* was the primary

search criterion since it is a set of conventions for the organization and structure of texts that can affect the range of language resources an author sees as available to them (Bhatia 1993; Martin 1997; Swales 1990). For this, we turned to the phenomenological approach to psychopathology, which aims to describe the "conscious, lived experiences" of patients and "what [that] conscious experience—understood in the widest possible sense—reveals to the disciplined observer" (Moran 2019: 205). Thus, texts needed to be *first-person accounts*, which are broadly defined here as a description of an experience or event written by the authors from their own perspective. As a genre, they impose few constraints on organization and content and they allow one to observe "the various ways in which everyday experience can be disrupted" or altered by psychopathology (Bortolan 2019: 1054).

Of course, such a broad definition did not narrow the list of possible texts by much and additional criteria relating to topic and length were developed. It was decided that for topic—the only of the three main register features (Biber *et al.* 1999; Halliday and Matthiessen 2014) that could be controlled for—there needed to be more than one so that any significant findings would not be attributable to subject matter alone. The topics also needed to be general enough to be able to find examples for all four authors but distinct enough to warrant separate classification. The result was three topics, or *sub-genres* (as they are all first-person accounts with variation only in their content), a breakdown of which can be seen in Figure 2.

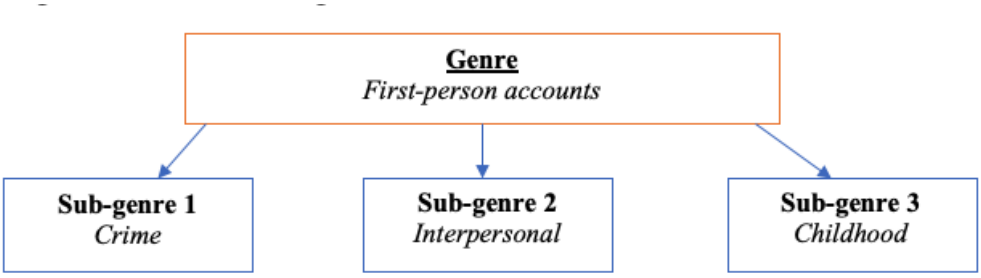

Figure 2. Breakdown of genre

Three texts — one per sub-genre — were collected for each author for a total of 12 texts, each ranging from 500 to 1000 words in length. For AW, two of the texts (*interpersonal* and *childhood*) were letters she had written to a friend who later reproduced them in a book (Wuornos 2011) and the third was a written record of a spoken interaction from a biography (Wuornos and Berry-Dee 2006). Of course, spoken and written modes impact language choices differently (Biber *et al.* 1999), but for AW, it appeared that she wrote and spoke in a very similar, informal way, so it was decided that the value of the text as the choice for the *crime* sub-genre outweighed the risk in using a spoken excerpt. DR's texts were also selected from his biography, in which the author reproduced letters DR had written her with small interjections from her for clarity, though none of the excerpts chosen for DR contained such interjections (Ramsland 2016). For DB, excerpts from letters he had sent the psychiatrist who assessed him during his trial (and who later wrote DB's biography) were pulled from an article on the website for *New York Magazine* ('The Letters of Son of Sam', 2006). Finally, IB's texts were excerpts from a book he wrote

himself (Brady 2001), meaning that unlike the other authors, his putative audience was anonymous to him.

For the *crime* texts, the goal was to find an excerpt where the subjects described one or more of the murders they committed. This, however, was not possible for IB as he did not discuss his own crimes in his book. Instead, for him the text that was chosen included a mention of his interest and engagement in criminal activities but was primarily focused on a generalized description of 'the serial killer'. The *interpersonal* texts all discussed some topic related to social experiences such as a relationship or a specific interaction. Finally, the *childhood* texts all included a recounting of an event or phase of their life during pre-teen or teen years.

Before delving into the analysis section, a few limitations should be addressed. First, while it can be argued that all the texts generally served a similar purpose—i.e., the author's desire to tell their sides of the stories—the inability to control for audience introduces its own set of complications. The relationship between author and audience is generally agreed to be an impactful variable on language choices (e.g., Bell 1984; Halliday and Matthiessen 2014). For DB, DR, and IB, their texts were produced with the knowledge that they—or at least the information contained within them—would be disseminated to the public at large and were all written to or for relative strangers. For AW, this was not necessarily the case; two of the texts were letters written to a close friend and the other was produced as part of an interview in which she provided a confession for her actions, which is typically an inherently adversarial situation (Shuy 1998).

The second issue concerns the subjectivity of the texts as first-person accounts. Phenomenologists argue that subjective accounts allow for a more "comprehensive and faithful account of the phenomena under consideration" (Bortolan 2019: 1054) because the phenomena at issue are subjective themselves. However, the question still remains: how generalizable can any observations be with such person-specific data? If the first-person accounts are considered in isolation, generalization of any findings would, naturally, be impossible. The phenomenological solution to this dilemma is to therefore take accounts from a multitude of sources and identify the features which are *invariant* across them as well as features which are distinctive (Bortolan 2019).

It is acknowledged that with only four subjects and 12 texts, there is not enough data to warrant broad conclusions or generalizations and the different author-audience relationships represent a potential confounding variable. However, in the domain of the study of serial killers, there are relatively few possible subjects to begin with and even fewer with documented diagnoses who have written texts appropriate for analysis. Thus, in this context, and given the novelty of the approach, studying a small number of individuals and texts (even without the ability to control for audience) is a good first step as much can arguably still be gained from the patterns that do emerge, especially considering the detail produced by appraisal analyses.

Appraisal Analysis

Appraisal provides the means to analyze the patterns of linguistic resources authors use to express their *stances* (Martin and White 2005). It is comprised of three systems, each capturing a different type of resource. The system of *attitude* helps identify the core feelings of the stances; the system of *engagement* tracks whether the stance is presented

in a way that opens or closes the conversational floor; and the system of *graduation* acts as an umbrella system, tracking intensity of the feelings and level of commitment to the stance. For the purposes of this paper, we are focusing only on the system of *attitude*.

Attitude is divided into three types—*affect, judgment,* and *appreciation*—each of which encompasses a distinct set of resources for conveying different kinds of *feelings* (Martin and White 2005). *Affect* is considered to be at the core, covering **personal** emotions. It can be further separated into four categories, which are comprised of positive and negative items for each type of emotions. *Un/happiness* encompasses "emotions concerned with 'affairs of the heart' " such as *happiness, sadness, love,* and *hate* (Martin and White 2005: 49). *In/security* covers emotions relating to one's environment including *anxiety, confidence, trust,* and *uneasiness*. *Dis/satisfaction* is concerned with feelings about activities in which one is a participant, or of which one is a spectator such as being *angry, interested, bored,* or *engrossed*. Finally, *dis/inclination* deals with feelings toward the *irrealis*, or things that have not actually happened, such as *desire, fear,* or *keenness*.

The system of *judgment* covers five categories of **institutionalized** (shaped by society) feelings directed at the behaviors and traits of oneself and others (Martin and White 2005). *Normality* is for assessments of normalness and specialness, such as *normal/abnormal* or *stable/erratic*. *Capacity* was originally intended just for assessments of capability, such as *strong/weak* or *successful/unsuccessful*, but it has also proven useful for capturing expressions of violence where one person is being presented as **incapacitating** another person such as with verbs like *kill, harm,* or *attack* (Hurt and Grant 2019). *Tenacity* is for assessments of determination and dependability, such as *patient/hasty*, *loyal/disloyal,* or *brave/cowardly* (Martin and White 2005). *Veracity* is for assessments of honesty, such as *truthful/deceitful* or *discreet/blabbermouth*. Finally, *propriety* is for assessments of morality and ethics, such as *good/evil* or *altruistic/selfish*.

The final system of attitude, *appreciation,* is divided into three main categories: *reaction, composition,* and *social valuation* (Martin and White 2005). *Reaction* captures feelings similar to those seen in *affect,* but the focus is placed on the trigger of the emotion instead of the person feeling it, for instance saying *a boring building* instead of *this building bores me*. *Composition* captures evaluations of a 'thing's' "balance and complexity" (Martin and White 2005: 56), such as things that are *symmetrical* versus *asymmetrical, logical* versus *illogical*, or *simple* versus *complicated.* It has also been found to be useful for capturing references to things that maintain order and things that cause *dis*order, such as weapons (Gales 2010; Hurt 2020). Finally, *social valuation* covers assessments of the value provided by something, such as it being *innovative, authentic, derivative*, or *fake* (Martin and White 2005). Additionally, Martin and White briefly touched upon the link between valuation and judgment, stating that "positive and negative valuations of something imply positive and negative judgments" (2005: 58). Hurt (2020) further explored this and demonstrated how additionally coding items of *valuation* for the *judgment* types they instantiated was a useful expansion of the system, especially in forensic settings.

Instances, or *tokens*, of each of these attitude types can then be coded for additional variables that help generate a representation of an author's perceptions of and interactions with the world and the people and things in it. *Polarity* distinguishes between the positive and negative tokens and helps determine the overall tone of a text

(Martin and White 2005). *Explicitness* differentiates between *inscribed* attitudes that are conveyed directly through the word or phrase used (i.e., based on *denotation*) and *invoked* attitudes, which require shared knowledge or context to interpret (i.e., based on *connotation*). The final two variables help track who does the appraising—which is typically, though not always, the author—and who/what is being appraised. Coding for the *appraiser* makes it possible to not only see how the authors themselves view the world, but also their perception of how others view it and coding for the *appraised* makes it possible to track the distribution of self- and other-directed evaluations.

There are numerous ways to code texts for Appraisal, both by hand and using software. For this study, the software *UAM CorpusTool* (O'Donnell 2019) was used because it includes Appraisal as one of its built-in coding schemes and can provide raw frequencies of all coded features for individual texts and groups of texts. The 12 texts were coded one-by-one with each of the systems of Appraisal as a separate layer. Each word or phrase which conveyed an attitude was coded for the specific *attitude* category it best represented—e.g., *un/happiness* or *normality*—as well as for *polarity, explicitness, appraiser,* and *appraised.* These decisions were then discussed by the authors, especially when potentially contentious, but no formal reliability study was carried out.

The relationship between the stance-taking resources outlined above and psychological traits has yet to be investigated in the literature, at least in the way it is done here, and what research does exist on language and mental health has rarely examined personality disorders or pathological personality traits, with which most of the authors were diagnosed. This in conjunction with the inherent complexities of psychopathology made generating specific hypotheses about the results difficult and a more exploratory analytical approach was taken. That being said, however, the mapping of stance-taking patterns onto psychological traits was not done without some guidance from related (though non-linguistic) research on how the mental health disorders of concern in this study impact world view.

Analysis

Total word counts for the individual authors ranged from 1626 to 2235 words. Given the wide range, token counts were normalized per 1000 words to make the frequencies more comparable. To determine where significant differences in proportions of evaluative resources occurred between authors, Chi-Square tests were used (as the data are inherently categorical in nature; Field 2018) on a pairwise process, for a total of six pairs. Within-author comparisons were also conducted to determine whether any of the significant between-author findings were attributable, at least in part, to disproportionately higher or lower usage of a particular feature in any of the sub-genres. The results from the quantitative tests were then used to identify areas of interest for a qualitative exploration of how the resources were employed by the authors. Table 1 shows the results from the between-author comparisons for all of the *attitude* variables described in the above section. For the sake of brevity, though, only the quantitative results for the variables within the three *attitude* types and *polarity* are considered in this paper.

The cells contain the normalized frequencies of each variable per 1000 words. The highlighted cells indicate that the variable was used by that author at a significantly higher proportion (at the level of 0.05) than the author denoted by the superscript. For

		AW	DB	DR	IB
Affect	un/happiness	1.95	9.23	9.40^{AW}	2.44
	dis/satisfaction	5.85	13.53	8.50	11.23
	in/security	$17.05^{DB,DR}$	9.84	5.37	7.81
	dis/inclination	7.31	14.76	5.82	3.91
Judgment	normality	3.41	11.69^{AW}	13.87^{AW}	11.23
	capacity	39.45	16.61	30.87	38.57
	tenacity	24.35	11.69	14.32	22.95
	propriety	26.30	21.53^{DR}	11.19	40.53^{DR}
	veracity	5.36	9.23	6.26	10.25
Appreciation	reaction	3.41	9.84	3.58	7.32
	composition	11.20	15.99	9.40	21.48
	social-valuation	16.07	22.76	18.34	46.88
Polarity	positive attitude	63.81	55.97	53.69	$125.49^{AW,DB,DR}$
	negative attitude	97.42^{IB}	110.70^{IB}	83.22^{IB}	99.12

Table 1. Between-author comparisons for attitude – frequency per 1000 words

instance, in the row containing *un/happiness*, DR's proportion of use was significantly higher than AW's, thus DR's cell is highlighted and the superscript indicates this relationship to AW. As this table shows, there are several *attitude* variables which were used at significantly different proportions by the four authors. It should be noted that variables are discussed in terms of percentages from this point on, however, because the normalized counts do not always properly represent their proportions. For instance, author A may use overall more attitude than author B, making the frequencies, even when normed, for author A appear slightly higher, but the proportion of total attitude tokens could be exactly the same.

The results pertaining to each author and their individual patterns of use are presented in turn. How these patterns then relate to their psychopathologies is explored in the discussion. Since the literature on analyzing linguistic, and specifically stance, resources in this way is scarce, these interpretations involved extrapolating based mostly on current understandings of how the different mental health disorders and their component traits impact perception of and interaction with the world.

Aileen Wuornos

For overall attitude, AW demonstrates a higher use of *judgment* than any other resource—accounting for 61.15% of total *attitude*—using *affect* and *appreciation* at similar rates—accounting for 19.88% and 18.98% of total *attitude*, respectively. Interestingly, as Figure 3 shows, AW consistently employs positive resources about 40% of the time and negative ones about 60% of the time regardless of *attitude* type.

Beginning with *affect*, AW was found to use *un/happiness* at a significantly lower rate than DR and *in/security* at a significantly higher rate than both DR and DB. Additional chi-square tests comparing proportions when further divided by polarity revealed that AW significantly differed from DB and DR on *-happiness* and from DB on *-security*. Figure 4 displays the distributions of AW's positive and negative affect types as percentages of total attitude tokens.

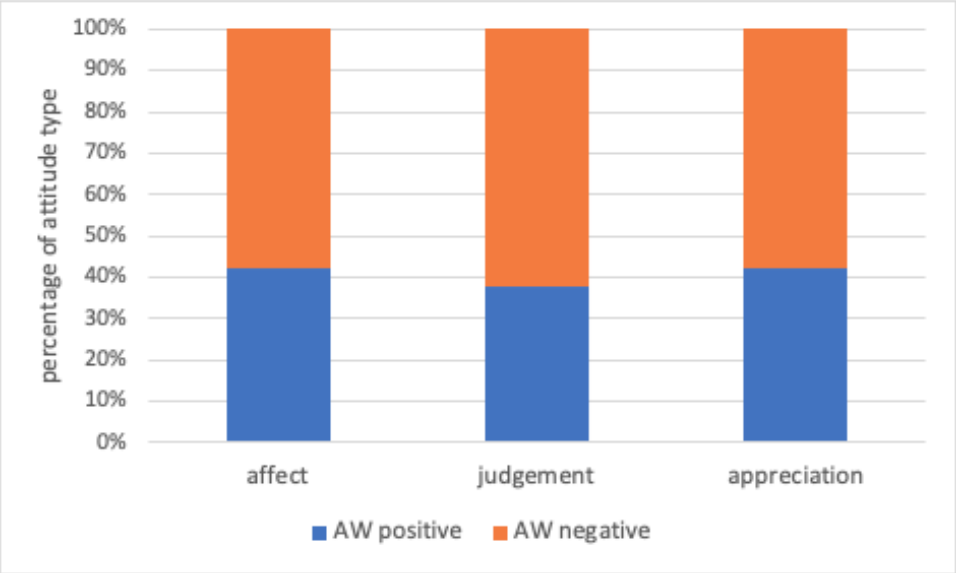

Figure 3. Distribution of positive and negative attitude types for AW

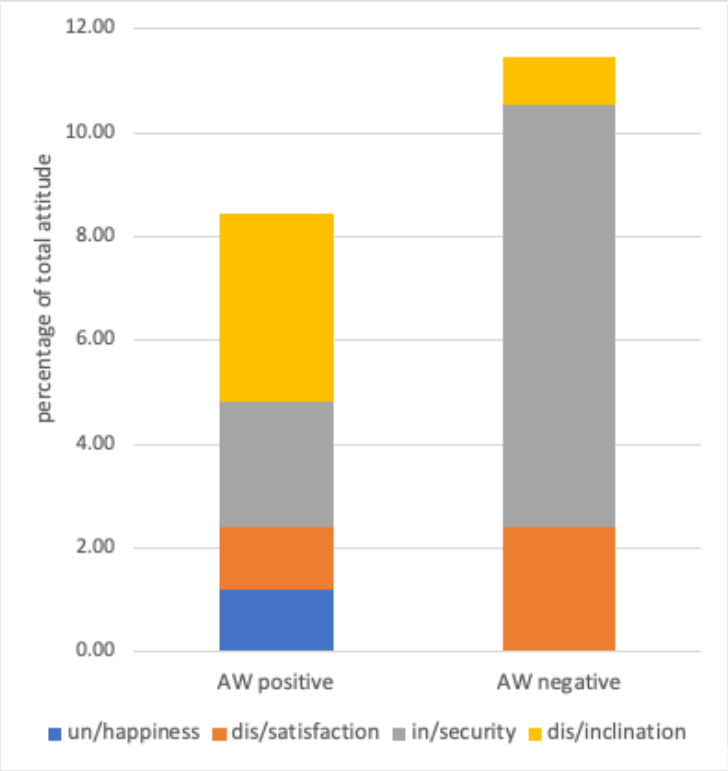

Figure 4. Distributions of positive and negative affect for AW

As Figure 4 shows, AW uses *-security* more often than any other type of affect and does not use any *-happiness.* As mentioned in the above section, *in/security* is concerned with feelings about one's environment as well as to express certainty/uncertainty about knowledge one possesses (Martin and White 2005). Looking more closely at how she uses *-security*, it is revealed that she most often focuses on the aspects of her environment that were most unsettling and that presented a threat of harm—such as when she described feeling *uneasy* and *scared* in the *errie [sic] dark* surrounding a man's house or when she talked about *going through withdrawals* during an interrogation. In the rare instances that she used *+security*, it was to declare a level of certainty about something, such as when she *knew [Mallory was] going to rape* her or when she *wanted to make sure…[she] could use [her] gun.*

In terms of overall *judgment,* AW was found to use significantly less *normality* than DB and DR. However, when divided by polarity, significant differences are found for the variables of *+normality, +tenacity, -normality* and *-capacity* between AW and at least one other author. More specifically, her use of *+normality* was significantly lower than DR's; her use of *+tenacity* was significantly higher than IB's; her use of *-normality* was significantly lower than DB's; and her use of *-capacity* was significantly higher than IB's and DB's. Figure 5 shows a breakdown of the different judgment types in terms of their percentages of total attitude tokens.

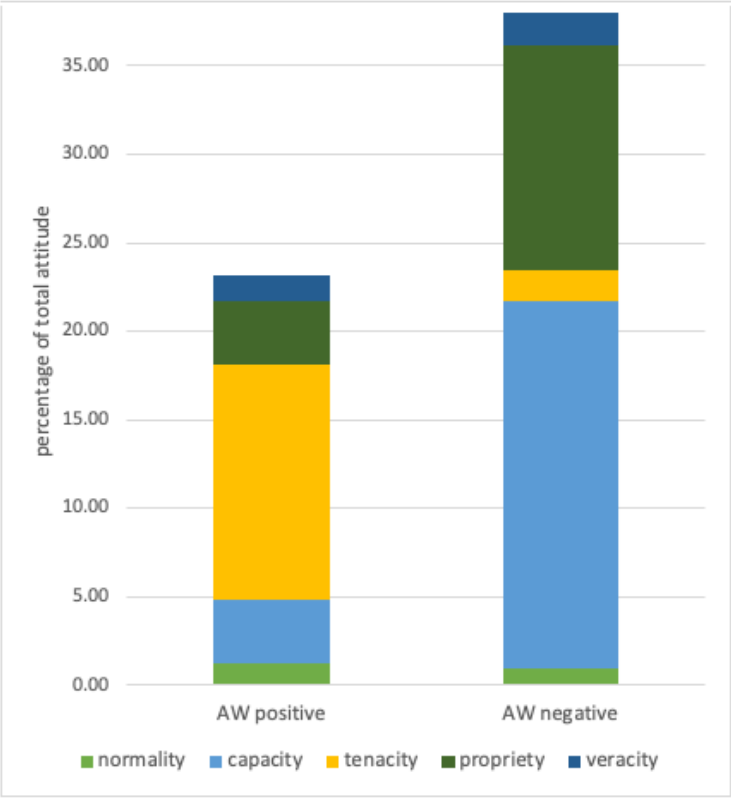

Figure 5. Distribution of positive and negative judgment for AW

Starting with *normality*, positive tokens in this category convey judgments of how special or normal someone is while negative tokens often convey judgments of bizarreness (Martin and White 2005). Despite the low amount of *normality* used by

AW, the function *-normality* served when she did use it was to mark the actions of her victims as out of the ordinary, adding to the support for her assertion that they were intent on causing her harm. For instance, when she asked her first victim when he was allegedly being too rough why he *still [had] to have [his] clothes on* and, referring to the same encounter in a different text, how she had *never had sex like that.*

For *+tenacity,* which accounted for 13.25% of AW's total *attitude* tokens, it was most often used to convey assessments of her own and others' determination to achieve something. When evaluating others, this determination is presented as being directed toward something that would cause her harm, such as how her interrogator *kept stokien [sic]* her despite her apparent distress or how one of her victims was *going to rape* her (a sentiment she repeats multiple times). When evaluating herself, it is more in reference to her resilience in response to the harmful actions of others, such as her *struggling* to break free then *booking it* away from her attacker or her *trying to* recollect and recount past assaults against her to an apparently apathetic interrogator.

Finally, for *-capacity*, which accounted for 20.78% of her total *attitude* tokens, AW often referenced violent acts committed both against and by her—a coding decision based on Hurt and Grant (2019) work demonstrating the usefulness of *-capacity* for tagging violent verbs, where one person is by definition incapacitating another. All three of her texts included at least a small piece devoted to detailing an assault (or intended assault) against her, and in two of those texts, these were immediately followed by her detailing how she retaliated against them. For instance, she describes how one of her victims was *pushing [her] down* and that she was convinced he was *going to rape* her and that another was *going to blow [her] brains out*, which were the reasons she *shot* (and ultimately killed) them. She also talked about a man who was *on top of* her and *slapping* her before she got away and when he pursued, she started *kicking* him until she *felt he was down enough.* She also sometimes used *-capacity* and *+tenacity* together to assert that others intended to—and were determined to—harm her, thus justifying her actions.

It should be noted that AW's use of *-capacity* was one of the three significant between-authors results for which there was a potentially influential significant within-authors finding. Figure 6 shows the distribution of negative *judgment* types across AW's three texts as a percentage of the total *attitude* for each respective text—e.g. *-capacity* makes up about 19% of the total *attitude* seen in her childhood text.

As Figure 6 shows, a significantly higher proportion of *-capacity* is used in AW's childhood text than her interpersonal text, in which *-propriety* instead dominated. Part of what could explain this discrepancy is that the interpersonal text centered around AW's rationalization to her friend about why it was incorrect that she had been classified as a serial killer. This involved detailing what she perceived to be corrupt and/or cruel actions (i.e., judgments of *impropriety*) by various others, such as the interrogators who 'knew' she was distressed but *kept stokien [sic]* her anyway or the *crooked scum* who spread the serial killer story. Ultimately, the *-capacity* in her childhood and crime texts served a similar function to that of the *-propriety* in the interpersonal text; these differences did not change the overall message that she perceived others as being intent on causing her harm, they only indicated a shift in the resources used to communicate it.

For *appreciation*, the third and final main *attitude* type, the only significant finding was that IB employed it—or more specifically *+appreciation*—at a significantly higher

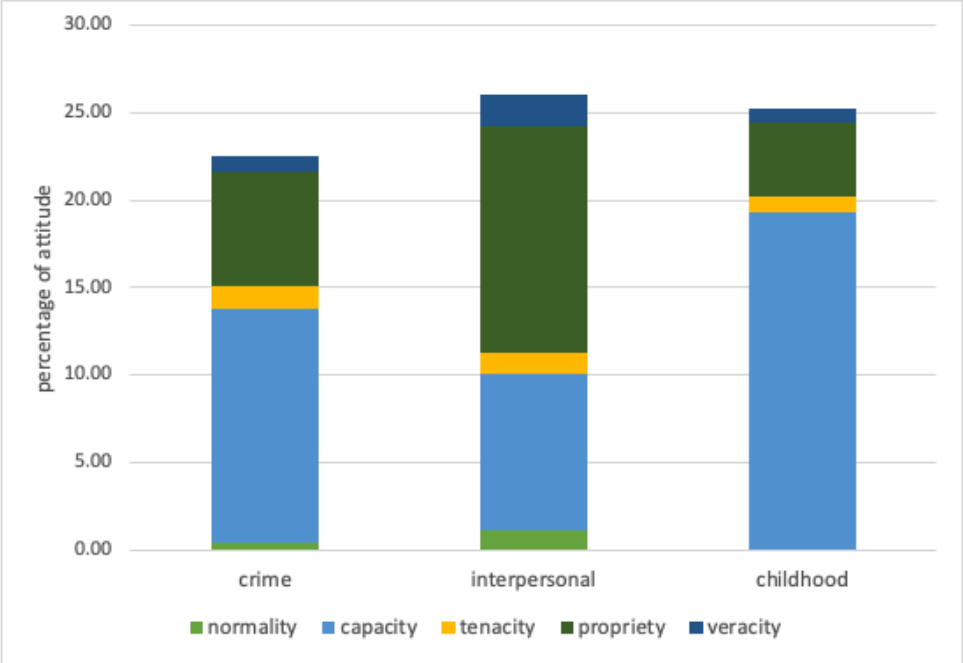

Figure 6. Distribution of negative judgment in AW's three texts

rate than AW. However, when the more specific categories within *appreciation* were analyzed, the significant difference no longer held, and no new significant differences emerged.

David Berkowitz

Similar to AW, DB used *judgment* the most, accounting for 42.43% of total *attitude*, and used *affect* and *appreciation* least, accounting for 28.41% and 29.15% of total *attitude*, respectively. Consistently, about one-third of *attitude* tokens, regardless of type, were positive while the remaining two-thirds were negative, as seen in Figure 7.

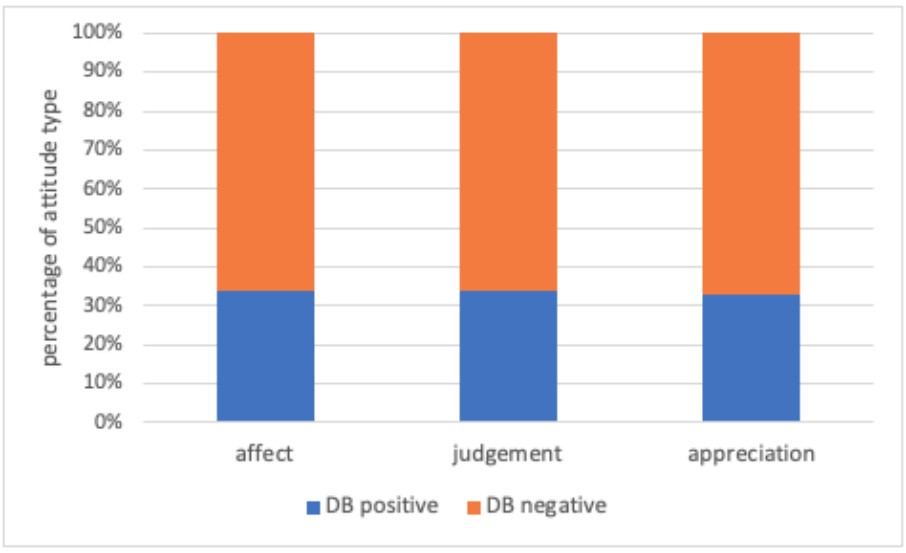

Figure 7. Distribution of positive and negative attitude types for DB

Table 1 shows that, within *affect*, DB uses a significantly lower proportion of *in/security* than AW. When positive and negative *affect* are analyzed separately, it is revealed that this difference holds only for *-security* and that he additionally demonstrates a significantly higher proportion of *-happiness* than AW does. Figure 8 shows the breakdown of DB's use of positive and negative *affect*.

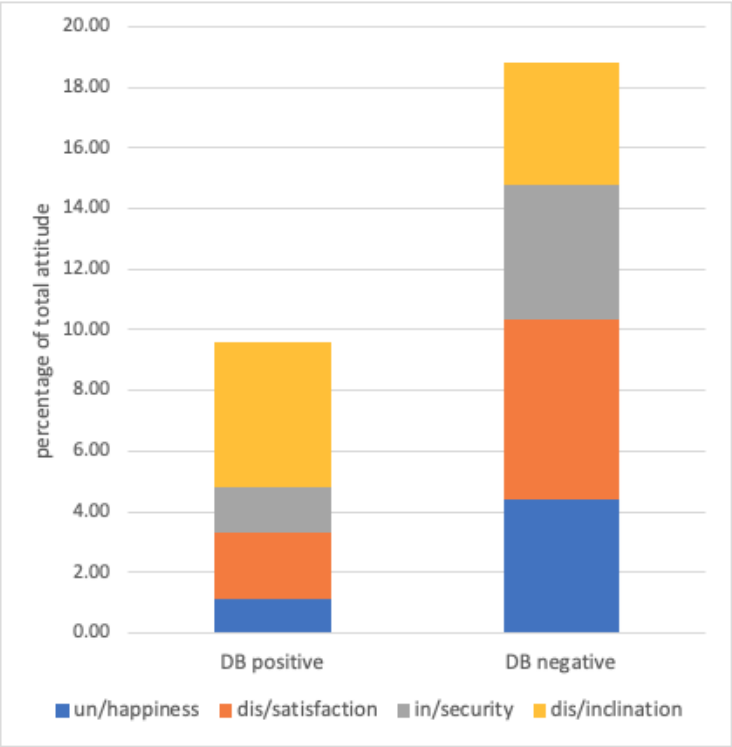

Figure 8. Distribution of and negative affect for DB

-Happiness was most often used in reference to his general mood, such as his feeling *hopeless*, *miserable*, or *unhappy*. However, he also attributed feelings of *unhappiness* to others, such as his biological mother giving birth to him to *spite* his biological father or how he *hurt* his adoptive father with his actions. Often these attributed feelings of *-happiness* occurred in conjunction with his own and alongside instances of *-security,* such as when he talked of his *lonliness [sic]* or the *guilt* he felt about his mother apparently dying in childbirth. These resources combined to provide a sense of an overall negative view of the world and of himself.

In terms of *judgment*, DB used significantly higher proportions of overall *normality* than AW and of overall *propriety* than DR. When analyzing positive versus negative *judgment*, it is found that DB used a significantly higher proportion of *+veracity* than DR, of *-normality* than AW and IB, and of *-propriety* than DR. The distributions of positive and negative judgment can be found in Figure 9. The judgments of *-normality* were typically directed at himself, referring to his *rotten social life* or to his crimes as feeling like *the actions of a stranger*. He used this alongside *-happiness* to convey a generally negative view of himself and his life. He employed *-propriety* tokens often in reference to his own actions as well as in reference to others as justification for his crimes. When self-directed, these tokens captured actions ranging from his childhood crimes of writing *graffiti and curse words* on the walls and starting *garbage and abandoned car fires* to his

later *shootings* as his way to get *revenge*. When outward-directed, he talked of his *inconsiderate neighbors,* people *mentally oppressing* him, and how the people he killed *[weren't] so innocent*.

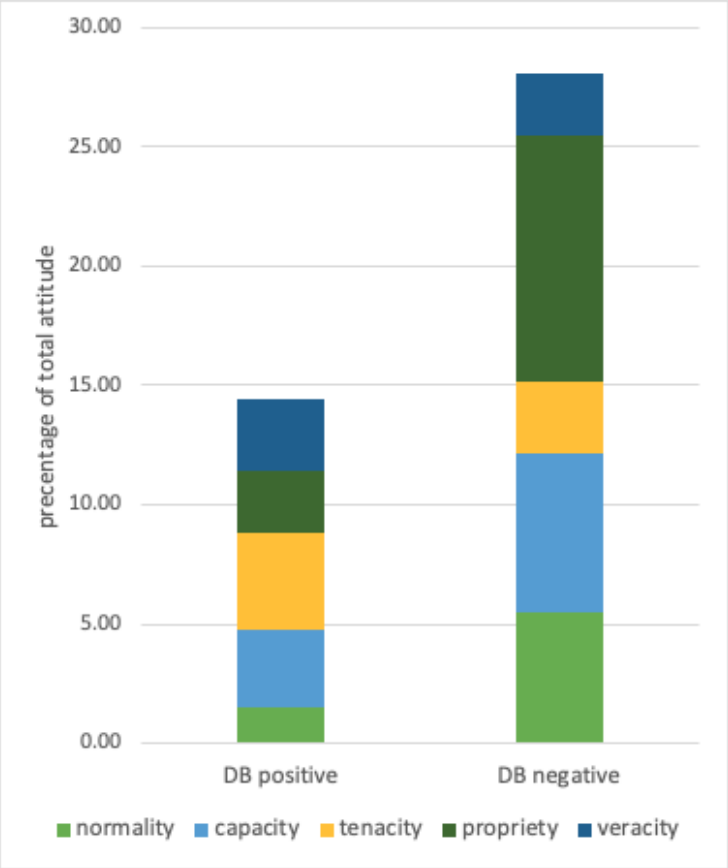

Figure 9. Distribution of positive and negative judgment for DB

There was a potentially influential within-author finding in DB's use of *-propriety* between his *interpersonal* and *childhood* texts. Figure 10 displays the distribution of negative *judgment* across DB's three texts as a percentage of the total *attitude* for each respective text. As the graph shows, the overwhelming majority of his negative *judgment* tokens in the *childhood* text—of which there were far fewer than in the other texts—were *-propriety*. This is because, in this text, he spent a good deal of time describing how he committed a multitude of criminal acts as a minor before he ever committed his first murder. Despite this, the way that he used the *-happiness, -normality*, and *-propriety* tokens was fairly consistent across the texts. *-Happiness* and self-directed judgments of *-propriety* worked hand-in-hand to ostensibly convey a level of remorse for his actions as well as some acceptance of responsibility for harm he caused. Then, the judgments of *-normality* added to this by indicating that he viewed some of his more reprehensible actions as being 'out of the ordinary' for him.

Dennis Rader

Like AW and DB, DR used *judgment* the most, accounting for 55.88% of total *attitude*, and used *affect* and *appreciation* the least, accounting for 21.24% and 22.88% of total *attitude*, respectively. Unlike AW and DB, the proportions of positive and negative tokens were

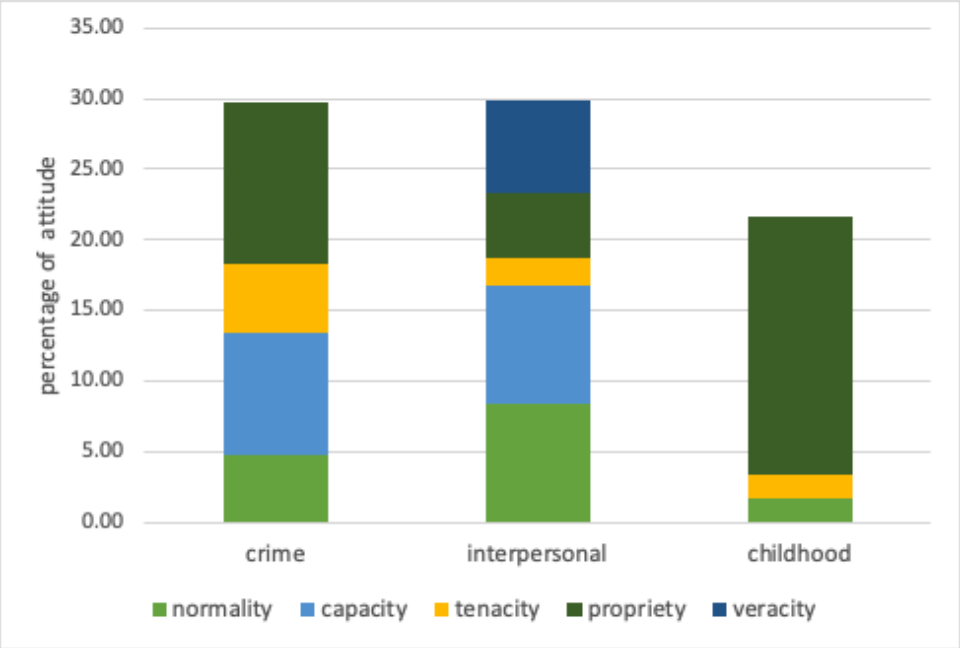

Figure 10. Distribution of negative judgment across DB's three texts

not consistent across the three *attitude* types, as Figure 11 shows. According to this graph, within *affect*, DR used more positive than negative while in both *judgment* and *appreciation*, the opposite was true. In fact, he used the highest proportion of positive *affect* of the four authors, which was significantly higher than IB's. However, this significant difference does not hold when the *affect* categories are analyzed separately.

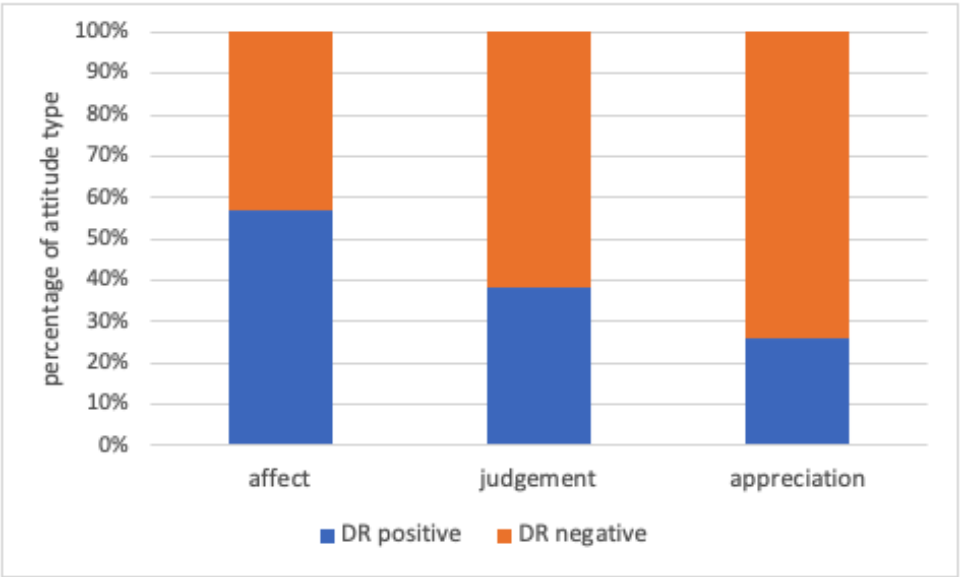

Figure 11. Distribution of positive and negative attitude types for DR

The results in Table 1 show that within overall *affect*, DR used a significantly higher proportion of *un/happiness* than AW and a significantly lower proportion of *in/security* than AW. The significant difference on the variable of *in/security* disappears when broken

down by polarity but does hold for *-happiness.* Figure 12 shows the distribution of the positive and negative *affect* types for DR.

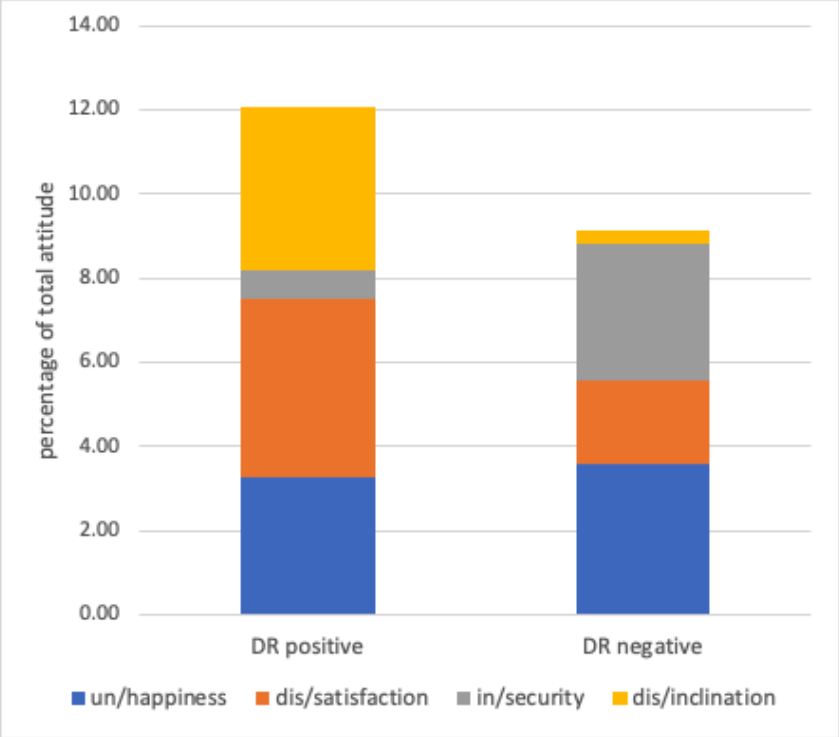

Figure 12. Distribution of positive and negative affect for DR

As Figure 12 shows, DR used similar amounts of positive and negative *happiness*, which he also used in similar ways. With *-happiness,* it was almost exclusively to express negative reactions to interpersonal stresses, such as when he *became physically sick* when his future wife did not come to a gathering or when his *heart was broken* by a childhood girlfriend moving away. His use of *+happiness* was most often feelings directed at people or things in his life rather than moods, such as how he *really loved* a childhood girlfriend or how he found a bookstore he *liked.*

For overall *judgment*, DR was found to use a significantly higher proportion of *normality* than AW and a significantly lower proportion of *propriety* than DB and IB. Within positive *judgment*, it was found that he used a significantly higher proportion of *+normality* than AW and a significantly lower proportion of *+veracity* than DB. Within negative *judgment*, he was found to use a significantly higher proportion of *-capacity* than DB and a significantly lower proportion of *-propriety* than DB and IB. The distribution of the positive and negative *judgment* types can be found in Figure 13.

DR's use of *-capacity* showed a lot of variation. In some cases, it captured instances of his discussions of *bondage*, which was part of his modus operandi. Interestingly, these instances were really the only ones that got close to referencing violent actions against another person. He also used *-capacity* in reference to himself and his capabilities, such as how he was a *slow learner* or his *failed attempts at kidnapping*. His use of *+normality* when used to reference himself or his own behaviors, typically served to demonstrate some aspect of 'normalcy' in his life or at least desire for such things. For instance, he

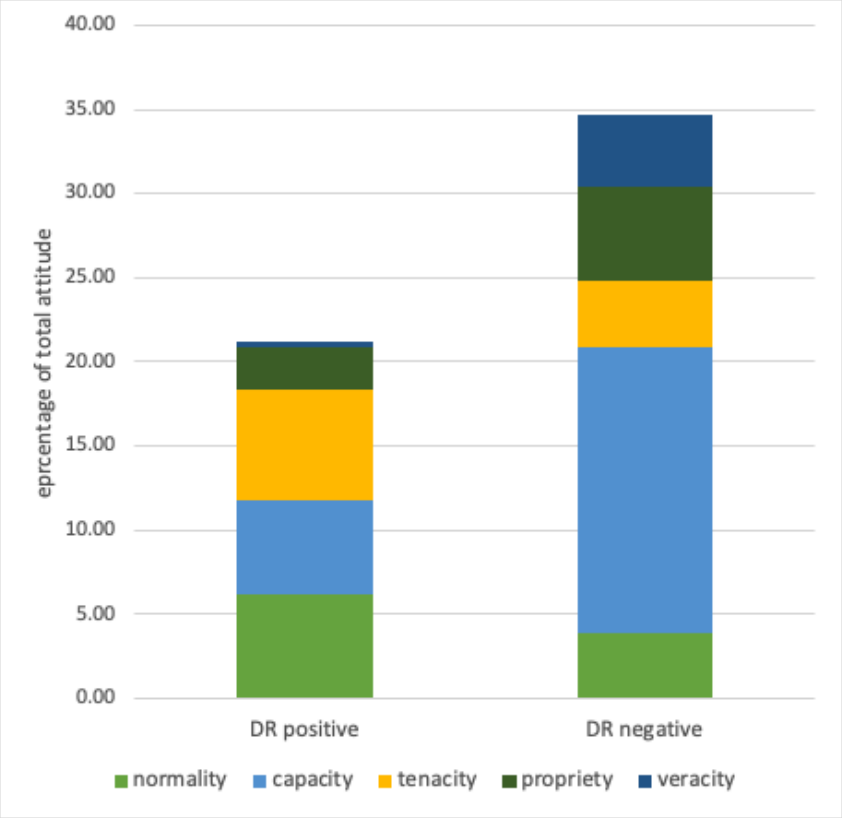

Figure 13. Distribution of positive and negative judgment for DR

talks about trying to *not draw attention* walking away from an attempted kidnapping as well as the various phases of his relationship with his wife from him *propos[ing]* to *looking for rings* to *[finding] a place to live*. He used *-normality* in a similar way, identifying personal experiences or traits that were more 'abnormal', such as him *being awkward* or a *lone wolf* but also pointing out things he found odd in others, such as when talking about a childhood girlfriend saying *but [she] was more of a tomboy*.

When DR used *-propriety*—which only accounted for 5.56% of total *attitude*—it was mostly in reference to himself, though not always explicitly. That is, while he did reference some of his illegal actions (or intentions to commit illegal acts), such as *kidnapping* and *stalking*, he also quite often referred to what he called his *Dark Side*, *Black Hat*, and *dark crack*. In doing so, he deflected some of the guilt for his crimes onto something ostensibly separate from his 'typical', moral self. Taken together, DR appears to be appealing to the audience by suggesting (1) he was not completely in control of his actions, (2) was aware of the extent of his abilities, and (3) had desires for and made an attempt at normal relationships in the past.

Ian Brady

IB was the only of the four authors to demonstrate a higher proportion of positive than negative *attitude* tokens. Interestingly, when separated by *attitude* type, this holds true for *affect* and *appreciation* but not for *judgment*, which was about 53% negative, as seen in Figure 14.

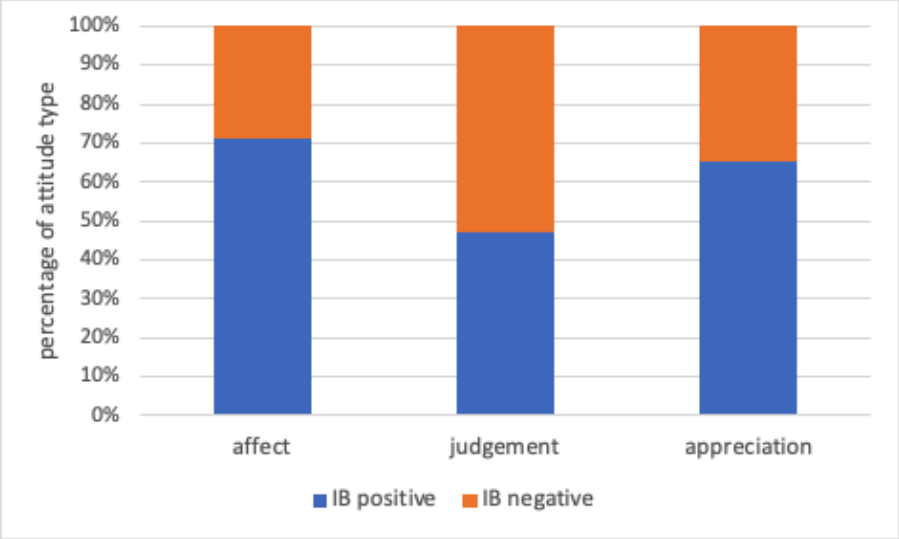

Figure 14. Distribution of positive and negative attitude types for IB

The only significant difference for *affect* between IB and the other authors was that he was found to use significantly less *affect* overall than all three, accounting for only 11.3% of total *attitude* tokens. The distributions of positive and negative *affect* are shown in Figure 15.

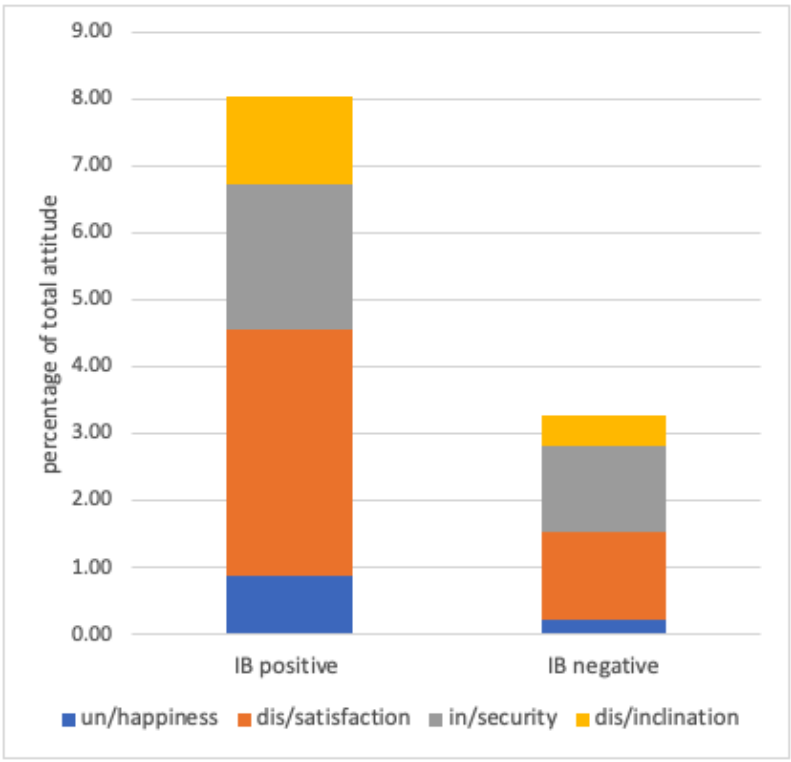

Figure 15. Distribution of positive and negative affect for IB

Perhaps most interesting is that about 60% of these were attributed to someone else—usually some generic third party—or were presented as a 'shared' feeling. For instance,

he talks of 'the serial killer' who *wants more NOW* and of the *common human tendency to luxuriate in fear-induced guilt*. When presented as 'shared' feelings, they are often structured in a way that indicates he views others as being no different from him, such as when he says *we are reluctant to admit that the child is still there deep in each of us* or that we all pretend we *are beyond good and evil and proud of it*. The *affect* tokens representing his own personal feelings were sometimes used to declare a lack of feeling toward something he did, like saying his book is *not an apologia* or that *adverse critism… will not cause [him] to retract one word*. Some of the remaining personal *affect* tokens were positive but directed at negative things, like his *boundless energy for criminal pursuits*, while others were positive feelings about positive things, like him *soaking up the atmosphere* or feeling *truly alive* when he visited childhood 'haunts'.

As Table 1 shows, IB uses a significantly higher proportion of overall *propriety* than DR. When broken down by polarity, it is revealed that this is specifically within *-propriety* and that he also uses a significantly lower proportion of *-capacity* and *+tenacity* than AW and of *-normality* than DB. The distribution of IB's positive and negative *judgment* types can be seen in Figure 16.

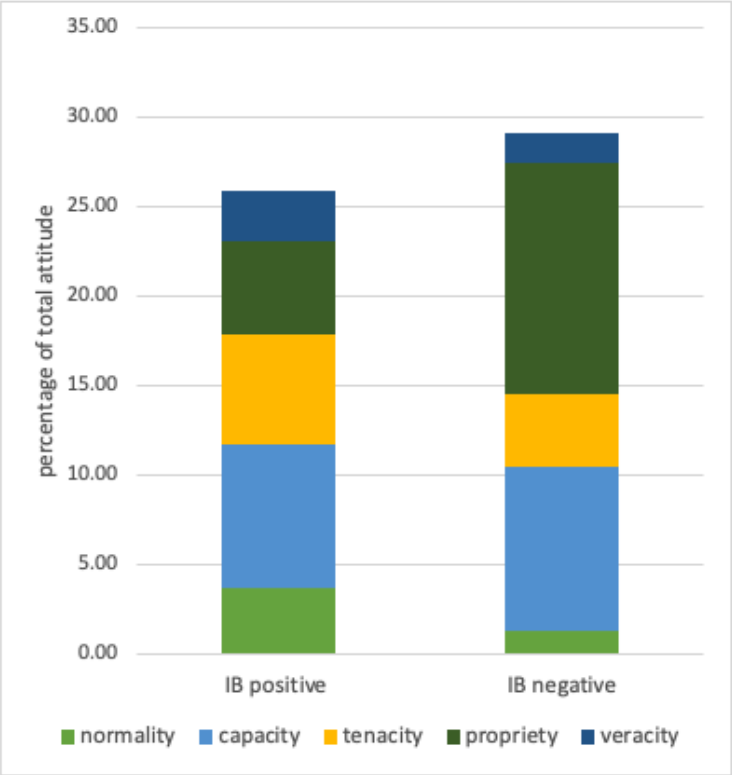

Figure 16. Distribution of positive and negative judgment for IB

IB's apparent preference for *-propriety* presented an interesting pattern. They were rarely self-directed, but when they were, it was not usually to denounce his actions. For example, he explicitly states that his book is *not an apologia* and that *remorse is a purely personal matter* and not something for the public to witness. He also talks of his *boundless energy for criminal pursuits* and his *studious, professional attitude towards crime*, implying a positive view toward illegal acts. Most often, *-propriety* was used in reference to some vague other person/group or society as a whole. For instance, he talks

about the *seed of corruption* being inside everyone, about *human savagery*, and about the *greed* and *hypocrisy* of people in power. This pattern demonstrated not only that he appeared to hold views of ethics and morality that were almost completely opposite of society's but that he also viewed himself as separate and apart from most of society in such matters. In fact, he even said as much, claiming he *[is] no longer of your world,* that he *[is] now simply a curious observer.*

He appeared to combine these morality judgments with judgments of *-capacity* to add to his seemingly self-righteous attitude. He does this by evaluating the capabilities of the masses and rarely turning them toward himself. For example, he talks of the *stultifying lassitude of ordinary modern life* and of a *freedom of thought and expression* he says most free people *will fail to experience.* When these judgments are turned inward, it is usually to talk about his imprisonment with terms that imply he is being incapacitated by someone—for example, when he talks of being in *captivity* or refers to his reader as his captor saying *you contain me till death in a concrete box.*

Discussion

The value of Appraisal in forensic linguistic contexts has been demonstrated in research on, for instance, threatening communications (e.g., Gales 2010; Hurt and Grant 2019) or courtroom discourse (e.g., Gales and Solan 2017). However, it's potential to be used to assess texts for evidence of psychological traits was yet to be explored. This paper demonstrated how Appraisal could be used for such purposes by helping to capture patterns in the linguistic choices of four serial murderers when expressing their stances. These patterns could then be examined in relation to the psychological traits of the author to determine if there is a connection between them. Figure 1 contained the diagnoses received by each of the authors from which the traits that are discussed in the coming paragraphs were derived.

The inherent complexities of psychopathology and the paucity of previous research in this area made it difficult to hypothesize specifically what kinds of patterns would be expected for any individual author. The combination of traits and how they interact necessarily affect the relative import assigned to different aspects of experience (Millon *et al.* 2012), meaning that the impact of any trait could reasonably be communicated using a variety of resource combinations. For instance, consider the trait of *hostility,* which is marked by anger as a frequent or persistent reaction to stimuli (Association 2013). There are numerous ways in which such anger could be expressed, primarily depending on what aspects of their experience the individual focuses on—e.g., use of *-satisfaction* would place the focus on the author's emotional reaction itself (internal), whereas to place the focus more on the trigger of the anger (external), some type of *appreciation* or *judgment* might be used. Due to the lack of any concrete path to guide expectations, a more exploratory approach was taken. That is, the patterns that were identified for each author were examined in relation to their known psychological traits. These are, of course, not necessarily the only possible interpretations of the results, but given the information that is known about the authors, they represent reasonable and defensible evaluations based on observable evidence.

Beginning with AW, the most salient pattern was the high proportions of *-security, +tenacity,* and *-capacity,* which were often used in tandem with each other. *-Security* conveyed the frequent feelings of anxiety AW had about the people and things in her

environment; *-capacity* detailed both the harm others inflicted—or she believed they would inflict—on her and the harm she inflicted on them in response; and *+tenacity* communicated her assessment of the level of determination of others to inflict said harm on her. This pattern suggests a tendency to view the world and others as threatening, which is consistent with what is known about the basic schemas often found in individuals with borderline personality disorder (BPD; e.g., Butler *et al.* 2002). More specifically, though, it is perhaps explained by the BPD traits of *interpersonal hypersensitivity* and *emotional lability* as well as the trait of *hostility,* found in BPD and antisocial personality disorder (ASPD; Association 2013). These traits mark an increased proneness to assuming malicious intent (represented by the combination of *+tenacity* and *-capacity* of AW by others), experiencing heightened negative emotional states and reactions (represented by *-security*), and reacting aggressively (represented by *-capacity* of others by AW).

For DB, the most notable pattern was the high proportions of *-happiness*, *-normality*, and *-propriety.* His use of *-normality* marks his actions as being 'out of the ordinary' for him, as something he perhaps would not have done given due consideration. The combination of the self-directed judgments of *-normality* and *-propriety* alongside *-happiness* portray him as being potentially remorseful for his actions. However, this is then contradicted by his use of other-directed *-propriety* as a way of justifying his crimes. One possible interpretation of this pattern is as a result of the *impulsivity* and *attention seeking* traits noted by Abrahmsen (1979) and the *aloofness* associated with the bygone paranoid subtype of schizophrenia with which he was diagnosed (Association 2000). *Impulsivity* is defined by spontaneous, unplanned actions (Association 2013), which one might later upon reflection view as having been uncharacteristic (*-normality*) for them. The inconsistency of DB's ostensible remorse alongside an assertion that there is justification for his actions may be the result of a combination of *attention seeking* and *aloofness*; the apparent claims of remorse (self-directed *-propriety* and *-happiness*) representing a desire to garner sympathy from the audience and the contradictory 'justifications' suggesting that remorse was a likely carefully crafted illusion.

DR demonstrated most notably high proportions of *-happiness*, *-capacity,* and *+normality.* The high use of *+normality* points to a strong desire to live a 'normal' life, possibly as a way to keep his self-proclaimed 'dark side'—over which he claims to have had no control—at bay. The tokens of *-happiness* then marked instances of distress caused by either a real or perceived threat to some aspect of this coping mechanism. The focus on creating a 'normal' life could also be indicative of preoccupation with how others perceive him and when combined with the self-directed judgments of *-capacity,* suggest deflated self-esteem. The *obsession* feature of obsessive-compulsive disorder (OCD) could help explain the combination of *+normality* and *-happiness. Obsessions* are "recurrent thoughts, urges, or images" that, as a result of being "intrusive and unwanted", cause distress which an individual may try to ignore or cope with using other thoughts or actions (Association 2013: 237). For DR, the obsessive thoughts appeared to revolve around his 'dark side', and creating a 'normal' life for himself acted as the coping mechanism. Aspects of narcissistic personality disorder (NPD) relating to the import of others' perceptions and the effect of self-esteem on emotional regulation (Association 2013) might also help explain the use of all three *attitude* types. That is, his apparent low self-esteem (self-directed *-capacity*) and desire for attention and approval from others

(*+normality*) could have resulted in poor emotional regulation, which could then help explain the distress in response to interpersonal stresses that were often conveyed with *-happiness.*

Finally, IB's high proportion of *-propriety* and overall *positive attitude* presented an interesting pattern. While he did use *-propriety* in reference to his own actions, these were rare and typically accompanied by some positive token, indicating a positive view of his 'improper' actions. This pattern did not hold for other-directed tokens of *-propriety*, which were used to make blanket evaluations of the ethical and moral makeup of vague other persons/groups or society as a whole. The *grandiosity* trait of NPD could well help explain this pattern. *Grandiosity* is marked by condescension toward others stemming from a firm belief of superiority over them (Association 2013). The condescension is evident in the incongruity between the positive view of his personal *impropriety* and the harsh blanket judgments of the morality of others.

While there were some observable connections between patterns of *attitude* and psychological traits for each author, the small size of the dataset limits the generalizability of the findings. However, the fact that there were interpretable connections between the psychological traits and the appraisal coding at all is promising and suggests that using Appraisal to analyze forensic texts for evidence of psychological traits is worthy of further exploration.

Conclusion

This paper has attempted to explore and demonstrate the value of Appraisal as an analytical tool in assessments of forensic texts. It provides a way of tracking the different linguistic resources that are used to express *stances*, resources which correspond to aspects of experience that are impacted by psychopathology. While the sample size was small, there were observable connections between some of the psychological traits of the authors and patterns of *attitude.* These promising results provide support for the merit of the approach presented in this paper. Of course, further research will be needed to better understand the connections between evaluative resources and psychopathology as well as to improve the reliability and efficiency of the analytical approach. Ideally, this future research will be better able to control for the confounding factors which could not be controlled for in this study such as audience and mode of communication. Additionally, being able to compare patterns of violent offenders—like those in this paper—to non-violent counterparts with similar psychopathological profiles would help to determine if any of the patterns are reasonably attributable to a higher propensity for violence.

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