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Linguistic Indicators of Psychopathy and Malignant Narcissism in the Personal Letters of the Austrian Killer Jack Unterweger

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Abstract: Forensic authorship profiling aims to extract socio-demographic information about the authors of anonymous texts based on linguistic features found in their written texts. One aspect of such a profile that is not usually considered is an analysis of the author's personality traits. The present study intends to provide a starting point for research into this area. This will be achieved through the investigation of linguistic features reflective of the conditions of psychopathy and malignant narcissism in 14 personal letters of the killer Jack Unterweger. Previous research in the field of psychology has largely examined "psychopathic" and "narcissistic" language in spoken conversations rather than written ones, or in texts produced for the respective study rather than in naturally occurring texts. The findings of the present study thus diverge from previous findings in some aspects (e.g., the use of first-person pronouns), while they provide support for others (e.g., the incoherence of thoughts and changes in topics).

Keywords: forensic linguistics; corpus; authorship; profiling; psychological disorders

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1. Introduction

As part of authorship analysis, which is used here as an umbrella term that covers both authorship comparison and linguistic profiling, forensic linguists are sometimes asked to establish (socio-)linguistic profiles of anonymous authors, particularly if no suspect authors are available for text comparisons. Such (socio-)linguistic profiling aims to extract information about the author's social background, age, gender, regional origin, and personality traits, among other factors, from the way language is used in the anonymous text(s) (e.g., [1,2]). One aspect of linguistic profiling, the description of personality traits, has been rather backgrounded in the forensic linguistic tradition ([3]; one recent exception is the research of Hunter and Grant [4]), even though research on connections between the Big Five Personality Traits model (include neuroticism, extraversion, openness to experience, conscientiousness, and agreeableness and enables a comparison of different kinds of personalities, as well as an exploration of the relationships between personality and other variables [5]) and linguistic markers is available (e.g., [6]). The incorporation of this research can enrich the work of forensic linguists and expand their analytic toolkit. For example, the recognition of particularly "dangerous", socially aversive constellations of personality traits such as the "Dark Triad" [7] (see [8] for further details) consisting of high traits in Machiavellianism (which includes includes the characteristics of manipulation, low empathy, cynicism, and acting on one's own advantage [9]) narcissism, and psychopathy can be of high interest in criminal investigations. Paulhus [10] proposes adding sadism to the list to make the Dark Tetrad (see also [11]). For example, the knowledge of being confronted with a psychopathic offender has a large impact on risk assessment, and by differentiating between specific disorders, one can even infer which kind of crime is more likely to be committed [12,13]. Furthermore, while the prevalence of psychopathy among adults is estimated to be at 4.5% [14], the prevalence of mental illnesses among prison inmates is estimated to be much higher, at around 64% [15]. Among prisoners and offenders,

the rates of psychopathy are also estimated to be much higher compared to the general population, ranging from 15–35% [14,16].

The question thus arises as to whether a linguistic analysis can help detect traits of psychiatric disorders. Previous research has shown that psychiatric disorders are indeed reflected in language use (e.g., [17]), yet not enough is known about how language use relates to specific psychiatric disorders. In particular, some research has been conducted with respect to the language of psychopaths, but a comprehensive theory of psychopathy and psychopathic communication is still lacking [18,19]. Importantly, most extant research has focused on psychopathic language use in clinical interviews, i.e., spoken language, while only few studies (e.g., [20]; see also [21–23]) have investigated the naturally occurring (as opposed to elicited) written linguistic output of psychopathic individuals, particularly on social media platforms such as Facebook and Twitter. Thus, the present study is among the first to venture into the realm of private written texts produced by a person diagnosed with a psychopathic personality disorder and malignant narcissism, namely that of the Austrian killer Jack Unterweger. Despite being a case study, the findings obtained in the following analysis might mark the beginning of further research into this area that is of particular interest to forensic linguists involved in the profiling of anonymous perpetrators.

1.1. Language and Psychiatric Disorders

Understanding language as "the house of the truth of being" [24], an undeniable connection between language and the mind becomes evident. According to Chomsky [25], language mirrors our mental processes—an approach which supports Fine's [17] argumentation that "speakers who are not psychiatrically normal may show their psychiatric state through the language they use", because language, cognition, and affect are closely related and intertwined. In fact, a variety of research has revealed connections between psychological traits and the use of language. For instance, Pennebaker and King [6] have shown that high scores for the personality trait of agreeableness is correlated with the use of positive emotion words, and that higher scores for the trait of neuroticism are found to correlate with higher use of negative emotion words. Similarly, in digital contexts, high emoji use has been related to higher levels of introversion [26,27], and Pennebaker [28] argues that personal pronoun use is positively correlated with depression, anxiety, and insecurity.

Further, Rude, Gortner and Pennebaker [29] as well as Sillars, Shellen, McIntosh and Pomegranate [30] have demonstrated that the use of pronouns can be used to predict health outcomes (e.g., depressed participants in Rude et al.'s study [29] showed a higher use of first-person pronouns compared to non-depressed individuals), and relationship stabilities. Due to the tight connection between cognition, language, and affect, disorders of affect can be analyzed by examining the polarity of used words; degrees of commitment portrayed; as well as the kinds, ranges, and intensity of emotions expressed. The clinical features of personality disorders which concern cognition, affect, and impulse control are also claimed to be reflected in the language use of individuals [17]. Since psychopathy and malignant narcissism are the focus of this paper, both conditions will be described in more detail below.

1.1.1. Psychopathy

The foundation of the conceptualization and measurement of psychopathy is based on Cleckley's monograph "The Mask of Sanity" [31]. Although psychopathy is not recognized as separate disorder, it was adapted to the subclinical sphere and is known as a subclinical personality trait, which overlaps with antisocial personality disorders of the DSM-5 [32] and dissocial personality disorders of the ICD-10. The ICD-10 is the 10th edition of the International Classification of Diseases, and the DSM-5 is the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders, the latter of which is largely used in the United States [33]. Despite not being recognized as a separate disorder, many studies have investigated psychopathy (see, e.g., [34–47]. The prevalence of psychopathy has been estimated to be at around 1.5–3.5% of the general population and up to 75% among the prison

population [42]. However, not all psychopaths become criminals [43] and not all criminals are psychopaths. As psychopathy is not recognized in either the ICD-10 or the DSM-5, the conception of Hare et al. [44] is widely known to be the gold standard of measuring approaches. This original approach comprises four facets on two factors. Factor 1 includes (a) interpersonal features such as a deceptive and manipulative interpersonal style and (b) affective features such as a flattened affect and emotional coldness, whereas Factor 2 includes social deviance features such as (c) an unstable (impulsive and irresponsible) lifestyle and (d) antisocial lifestyle [44]. Moreover, Cooke [42] refers to psychopathy as a "chronic disturbance in an individual's relations with self, others and their environment." He further argues that, as a personality disorder, psychopathy influences an individual's way of thinking, feeling, and behaving. That is, Cooke points out that psychopathic personality disorders are characterized by aspects relating to interpersonal relations, emotional functioning, and cognition. Since the processing as well as the production of language and the organization of speech are cognitive functions, it is likely that the impairments will be visible in the psychopath's linguistic output (see [45]).

As Viding [46] discusses, psychopaths process emotions differently from normal individuals, which might be the cause of the less emotionally intense language and low frequency of anxiety-related words found in psychopaths' communications (e.g., [18,48–50]). Additionally, Pitchford and Arnell [51] hypothesize that the fact that dysfunctional interconnections in the brain of a person diagnosed with psychopathy relating particularly to structures involved in moral reasoning such as the amygdala and the medial thalamus [52] not only results in differences in the processing of emotions, but also in psychopaths' reduced ability to process emotion words and emotional salience in language (see also [16,45,52–54]).

This reasoning is further supported by other scholars such as Cleckley [54], who describes psychopathic language as "empty". The term "empty" language is used to describe the use of "the same lexical items [. . .] across clauses or sentences" ([45]; see also [55]). Similarly, features of psychological distancing, such as speaking in the third person [56–58], as well as a reduced use of first-person singular pronouns [59], and a predominance of past tense in narratives are often found in psychopaths. Williamson's [45] research further indicates that psychopaths' language tends to be logically inconsistent and contradictory, with quick changes of topics, and disjointed answers to questions (see also, e.g., [54,60,61]). Despite all these salient speech behaviors, psychopaths are perceived as highly convincing. Hare ([16], own emphasis) explains this contradiction as such: "the oddities in their speech are *often too subtle* for the casual observer to detect, and *they put up a good show*". This description also highlights psychopaths' high skills in the manipulation of others.

In this respect, van Dijk [62] argues that "manipulators make others believe or do things that are in the interest of the manipulator and against the best interests of the manipulated", which makes manipulation "intrinsically goal-oriented" [63]. In communication and discourse, manipulation can refer to speakers providing incorrect information, withholding relevant information, or providing correct information but in a way that makes the addressee behave in a desired way [64]. Linguistic manipulation has been investigated in terms of cause-and-effect statements, which are expected to occur frequently in the linguistic output of psychopaths due to their manipulation skills [65]. Another subtle yet interesting form of linguistic manipulation regards the adoption of another person's speaking style, which was observed in a group of individuals scoring high in Machiavellianism ([66]; see also [21]).

Further, Cleckley [54] describes "hollow language" as a manipulative feature of psychopathic language. "Hollow language" refers to the use of words without a complete and full understanding of the words' meaning(s). That is, it has been attested that even though psychopaths do not grasp the emotional dimensions of language, they still use words with emotional connotations (e.g., [16,45,67]). This draws further attention to the fact that psychopaths use lies and deception to exploit and manipulate the people around them.

In light of the research carried out at the interconnection between psychopathy and language, it has to be kept in mind that psychopathy is a dimensional construct, which is why psychopaths do not form a coherent group. Rather, different types of psychopaths exist, which means that for some psychopaths, certain features might be more salient than others (e.g., [68]). Williamson [45] further points out that not all types of texts might be equally useful for the analysis of "psychopathic features". In fact, she was able to show that, for example, a negative correlation between the score on the PCL-R [69], the measurement instrument of psychopathy which is based on Hare et al.'s [18] approach, and the use of cohesion only emerged in neutral, not in affective, stories. More recently, Gawda's [70] study revealed similar findings.

1.1.2. Malignant Narcissism

Malignant narcissism is a "particularly dysfunctional and impairing variant of narcissistic disturbance" [71] that has received some attention in the psychologic and psychiatric literature (e.g., [72–76]), but less so with respect to language use. The concept of malignant narcissism was introduced in 1984 by Kernberg [77] and is described as consisting of the following features: typical narcissistic personality disorder, antisocial behavior, egosyntonic sadism, and paranoia [78]. Craig and Amernic [79] name a grandiose sense of self-importance; preoccupation with fantasies of unlimited success, power, brilliance, and beauty; belief in one's own uniqueness and high status; requests for excessive admiration; a sense of entitlement to special treatment; a lack of empathy; and interpersonally exploitative, envious, and arrogant, haughty behavior as symptoms of typical narcissistic personality disorders according to the DSM-5. Furthermore, malignant narcissists, like narcissists in general, are characterized by a sense of grandiosity, have a high vulnerability for offenses, and often perceive individual incidents as offenses to which they can retaliate in a sadistic and unrepentant manner [75].

Narcissism, in contrast with malignant narcissism, has been investigated previously with respect to language use. For example, Carpenter [22] and Davenport, Bergman, Bergman and Fearrington [80], as well as Hancock et al. [20] have examined narcissism in social media contexts. Even though earlier research on the use of pronouns in connection with narcissism (e.g., [81]) indicated that, particularly in narcissistic males, the use of first person pronouns (1PP, also known as "I-talk") is higher compared to that of non-narcissistic individuals. These findings were refuted in later research, which did not find the frequencies of 1PPs to be higher in narcissistic compared to non-narcissistic individuals [82]. In this research, high levels of narcissism have been found to correlate with second person pronouns (2PP) and swear words, as well as with low frequencies of anxiety/fear words, tentative words, and words related to sensory/perceptual processes [82]. It has to be highlighted again that, as is the case for the language of psychopaths, the vast majority of studies have focused on narcissists' spoken communications produced in clinical or interview settings rather than in their private written communication, making the present study one of the first to venture into this area.

1.2. Jack Unterweger

Jack Unterweger, one of the most notorious killers in Austria, was born in 1950. Very early in his life, he became involved in a variety of criminal activities that resulted in a life sentence for the murder of an 18-year-old woman, for which he was tried and convicted in 1976. During his time in prison, he started taking creative writing classes and even graduated from Middle School ("Hauptschule") [83]. As the author of several books, plays, and poems [83], Unterweger became a glamorous figure well-known outside the prison walls, and it did not take long for a fan community to emerge that celebrated him like a popstar [84]. A petition was established to free Unterweger from prison, putting forth that he had successfully been rehabilitated and claiming that he had become a respectable and well-educated person that deserved to be re-integrated into society. The petition was successful and in 1990, after 15 years in prison, Jack Unterweger was released [85,86].

After his release in the early 1990s, Unterweger, now a practicing freelance journalist [83], reported on a series of initially unrelated murders of prostitutes in different parts of Austria. After several months, however, due to the similarities between the recent murders and the murder committed by Unterweger in the 1970s, suspicions began to arise among the police force and Unterweger himself was believed to be the murderer [83]. A warrant was issued, but Unterweger managed to escape to the United States. Successful cooperation between the Austrian and American governments and police forces led to Unterweger being extradited to Austria, where he was apprehended immediately. The long-winding pre-trial and trial phases received much media attention and resulted in a verdict in 1994: Unterweger was pronounced guilty of the murder of nine prostitutes in Austria and the Los Angeles area. Unterweger was suspected to have killed at least 11 women, but due to the level of decomposition of the bodies of two of the victims, no viable evidence could be secured [85]. The verdict, however, never became legally valid because Unterweger hanged himself in his prison cell in the evening of the day the verdict was pronounced [83,85].

Reinhard Haller, one of the psychiatrists who interviewed Unterweger, diagnosed him with psychopathy and malignant narcissism, sadism, paranoia, and antisocial behavior [83,87]. Sadism, paranoia, and antisocial behavior are often considered to be related to psychopathy and malignant narcissism, or are considered symptoms thereof (e.g., [77,78,88,89]). Thus, they are not discussed separately in this paper.

Based on the extant literature, the following research questions were developed for the present analysis:

(1) Which linguistic features typical of psychopathy can be found in the personal letters of Jack Unterweger to Andrea Wolfmayr?
(2) Which linguistic features typical of malignant narcissism can be found in the personal letters of Jack Unterweger to Andrea Wolfmayr?

2. Data

The data for the analysis consist of 14 private letters and postcards of varying length written by Jack Unterweger during his time in prison from 1984 until his release in 1990. The corpus amounts to 5515 words (tokens) and 1757 types (i.e., different words). The letters are all addressed to Andrea Wolfmayr, who generously donated the corpus to this project (see Table 1 for details). Permission to use and publish the letters was also obtained from Keiper Verlag, the publishing company that printed some of the letters in Ms. Wolfmayr's 2018 book called *Jack und ich. Das Böse in mir* [90].

Table 1. Overview of the corpus.

Year	Text Type	Size (Words)
1984	Letter	683
1984	Letter	83
1984	Christmas card	34
1985	Postcard	24
1985	Letter	1643
1985	Letter	369
1985	Birthday card	7
1986	Letter	956
1986	Letter	542
1987	Postcard	82
1988	Birthday card	19
1989	Letter	122
1990	Letter	227
1990	Letter	724
	TOTAL:	5515

3. Results

For the analyses reported in his paper, the program MaxQDA was used to manually code, annotate, and tag the dataset, while frequencies of words were investigated with the corpus program SketchEngine. The peculiarities of Unterweger's language are retained in the translations of the examples.

3.1. Methodology

Based on the review of the literature on psychopathy and the relation to language analysis, the following symptoms were identified for linguistic investigation: manipulation of others, lack of empathy, psychological distancing, and thought coherence. For the condition "malignant narcissism", the presentation of the self and of others, the use of swear words, and the use of perceptual and sensory processes will be investigated in the corpus (see Table 2).

Despite extant psychological and linguistic research in this area, some of the used concepts are not readily operationalized for linguistic investigations. In this paper, linguistic manipulation will be investigated through an analysis of cause-and-effect statements [53,65] and speech acts [91,92]. The five speech acts included in this analysis are based on Searle [92], who distinguishes between assertives, directives, interrogatives, commissives, expressives, acknowledgments, and declarations. While assertive statements can either be true or false, directive speech acts "are intended to result in the recipient taking a specific action" [93]. Thus, they might play a central role in the manipulation of other people (e.g., [94,95]). Interrogative speech acts are requests for information, and by uttering commissive speech acts, the speaker or writer commits him or herself to some future action. Expressive speech acts are concerned with the writers' emotions or attitudes, and acknowledgements are used to acknowledge another person's contribution to the interaction. Lastly, declarative speech acts have a direct impact on the state of the world by bringing about some actual change, such as the naming of a child, a marriage ceremony, or the pronouncement of a verdict [91,92].

A problem arises with regard to the operationalization of "lack of empathy", since no generally accepted definition of "empathy" exists. However, as reported in Elliot, Bohart, Watson and Greenberg [96], empathy consists of the following three elements: (1) emotional simulation of other's emotions [97,98], (2) perspective taking [99], and (3) emotion regulation to "reappraise or soothe [. . .] personal distress at the other person's pain or discomfort" [96] to mobilize compassion [97,100]. Essentially, empathy is thus connected to "knowing and understanding the emotional state of another person" [101]. Psychological empathy is therefore a difficult phenomenon to quantify and operationalize, and will thus be investigated in terms of the (syntactic) perspective taken by the writer, as suggested by Kann [102], as well as in terms of the frequency and polarity of emotion words (e.g., [103]) present in the writings. Emotion words are words relating to emotions, such as "angry" and "happy", but also words that have emotional connotations, whether positive or negative, such as "courage" and "murder", respectively. The analysis of emotion words was conducted with LIWC-22 [104], as will be explained later.

As another symptom of psychopathy, psychological distancing has previously been investigated from a linguistic perspective in terms of the use of third person pronouns (3PP), as they are a means of self-distancing [56–59]. In order to investigate this phenomenon in the present texts, the number of first, second, and third person pronouns will thus be examined, as well as the use of proper names instead of pronouns. To deepen the understanding of the use of 1PPs, 2PPs, and 3PPs, a transitivity analysis will also be performed (see Transitivity Analysis).

Further, psychological distancing is investigated through the use of linguistic distancing in the form of hedges. Linguistic hedges are features that allow the speaker or writer to "withhold [the] commitment" [105] and therefore "allow information to be presented as an opinion" that simultaneously distances the respective speaker or writer from the truth conditions of the stated proposition.

Further, it has previously been shown that psychopaths quickly switch between conversational topics and that they often lose their train of thought (e.g., [45,54,60,61]). This symptom will be examined in terms of the theme–rheme structure and other types of coherence such as proforms, reference through exo- and endophora (deixis, anaphor, cataphora), and repetition, including synonymy and hyponymy [106–108].

In relation to the condition of malignant narcissism, the use of swear words, pronouns, and perceptual and sensory processes is investigated in more detail, as the latter have been found lacking in narcissistic speech [82]. Based on Bednarek [109], swear words are defined as words whose use is taboo, which have both literal and non-literal meanings, and express an emotion or attitude.

Further, the analysis of 1PPs and 2PPs will be applied to provide deeper insights into the presentation of the self and of others. The main focus in this paper, however, will be on the self-presentation of the writer and the presentation of the addressee, rather than on any other involved individuals. Lastly, the use of sensory and perceptual processes will be investigated closely through a transitivity analysis with a focus on mental processes and the respective participants.

Table 2. Investigated linguistic features and linked symptoms.

Condition	Symptom	Description/Definition	Linguistic Features
Psychopathy	Manipulation	"mak[ing] others believe or do things that are in the interest of the manipulator and against the best interests of the manipulated" [62]	Speech acts (e.g., [94,95]) Cause-and-effect statements [53,65]
	Lack of empathy	"Conscious attention to the feelings of another person" [101]	Point of view (Kann, 2017) Emotion words (e.g., [103])
	Psychological distancing	"transcend[ing] [. . .] ego-centric point of view" [110]	Decreased 1PP, increased 3PP, proper nouns, hedging (e.g., [56–59])
	Lack of coherence, quick changes of topics	Coherence: "an intrinsic property of discourse reflecting its semantic and pragmatic unity" [111]	Syntactic non-coherence: "lack of formal agreement blocking a potential cross-reference, discrepancies of polysemy or homonymy, discrepancy between referential and metalinguistic meanings, shifts in genericity, violation or normal patterns of placement of old or new information interpreted as a shift of referent, and an unmotivated shift in style" [107] Pragmatic non-coherence: "shift of referent, appearing as a time shift, and explicit or implicit contradiction" [107]
Malignant narcissism	Self- and other presentation		1PP, 2PP, 3PP, transitivity
	Swear words	Taboo words with both literal and non-literal meanings, and an emotional or attitudinal dimension [109])	
	Lack of sensory and perceptual processes		Transitivity: mental processes

Transitivity Analysis

Transitivity analysis, as part of the larger framework of Systemic Functional Linguistics (SFL) developed by Halliday [112] and Halliday and Matthiessen [113], has proven useful in forensic linguistics (e.g., [114–116]). In general, language is used to describe and report happenings and events in the real world. By encoding these happenings into linguistic descriptions, it is possible to analyze how an individual perceives these happenings and events, as well as the roles the involved individuals are perceived to have. Verbs are central to the analysis of happenings and events because they encode processes; as are participants, who play particular roles in these processes; and circumstances, which provide additional information about the processes. The most common types of processes are material, mental, relational, existential, and verbal ones [117,118], as exemplified in Figure 1. Since behavioral processes are very similar to material processes and are therefore difficult to distinguish, they will not be included as a separate category in this analysis (see also [115]).

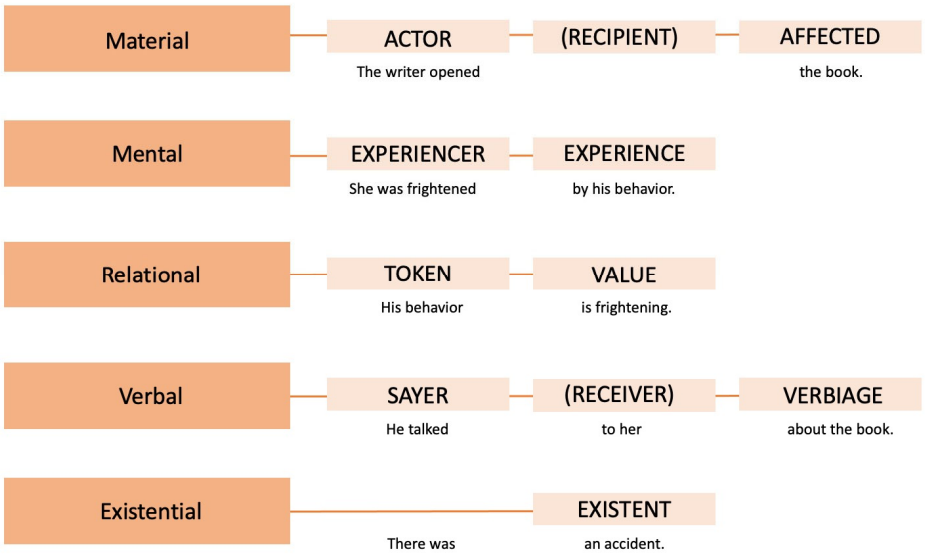

Figure 1. Transitivity; process types (based on [118]; see also [117]).

Material processes are "processes of doing and happening" [117], which involve an actor (normally the subject), the affected, and sometimes a recipient. Mental clauses, on the other hand, involve "processes of sensing" [117], such as thinking or believing, and are therefore of particular interest in the context of malignant narcissism. Further, relational clauses are used to identify or characterize someone or something in terms of categories. Existential processes, which are not particularly common, are clauses about "existing or happening" [117] and lastly, verbal processes are "clauses of saying" [117] which involve a Sayer, the Verbiage, and sometimes a Recipient.

The transitivity model is relevant in the present analysis for the following reason: as argued by Fine [17], a detailed analysis of a person's linguistic output makes it possible to examine the atypical or divergent use of language and relate the outcomes to underlying psychiatric disorders. Fine [17], for instance, suggests that the dysfunctional or atypical construction and use of verbs (i.e., processes) and related participants can be indicative of underlying disorders.

3.2. Ethical Considerations

The use of the data was generously consented to by the owner of the letters, Andrea Wolfmayr, and they are thus used and published with permission. Any names other than the author's and the addressee's have been removed in order to assure anonymity to the individuals involved.

It is important to keep in mind that, even though the findings might point towards particular linguistic features and feature constellations as being indicative of malignant narcissism and/or psychopathy, at this stage of research, the simple presence of individual features in a text does not mean that the respective writer suffers from either one of the investigated disorders. Thus, the findings cannot yet be considered a diagnostic tool but can form a basis for future research into this area.

3.3. Limitations

The main limitation of this analysis is the small corpus of only 14 texts. However, it is an advantage that all of these letters were written to the same addressee, which allows for the assumption that variation in language is not influenced by the audience (see, e.g., Bell, 1984). Additionally, all letters were written by the same individual, which makes it impossible to infer any generalized patterns. The findings of the analysis can nevertheless provide valuable insights and interesting starting points for future investigations, particularly since this study is among the first investigations based on the naturally occurring language of a psychopathic and narcissistic offender.

4. Analysis and Results

The first part of the subsequent section outlines the findings related to psychopathy, while the focus of the second part is on linguistic features connected to the underlying condition of malignant narcissism.

4.1. Psychopathy

As mentioned previously, psychopathy will be investigated in terms of manipulation, empathy (or lack thereof), psychological distancing, and thought coherence.

4.1.1. Manipulation

In terms of manipulation, the use of cause-and-effect statements as well as the manipulative use of speech acts are investigated. Statements are evaluated as cause-and-effect statements if they contain cause-and-effect connectives such as "if … so", "therefore", "consequently", "because", or similar (e.g., [119]). Further, indirect cause-and-effect structures that contain implied causes and/or effects were also included in the analysis. With 34 occurrences, direct constructions are more frequent than indirect ones, which appear only seven times.

Table 3 illustrates the use of direct cause-and-effect statements with examples from the dataset: in Examples (2) and (4), Unterweger even describes how he manipulates other people.

Even though indirect cause-and-effect statements (see Table 4) are less common, they appear to place a particular focus on Unterweger's own actions, which are portrayed as entirely positive (Examples (7), (8), and (9) in particular). He appears to relate his actions (his "good" behavior, his finishing middle school, and other achievements such as writing books, etc.) to be the causes for his release from prison.

Further, the use of speech acts is investigated in more detail below (see Figure 2). In the dataset, the most frequent speech acts identified are assertives, followed by expressives and directives. In the context of manipulation, the use of directive speech acts—in which another person is instructed, directly or indirectly, to act in a specific way—is the most interesting, which is why the directive speech acts will be investigated more closely in the subsequent analysis.

Table 3. Examples of direct cause-and-effect statements.

	German	English Translation
(1)	bin leider noch nicht zum Lesen gekommen da ich unbedingt lernen musste	haven't had the time to read it yet because I desperately needed to study
(2)	Ich muss auch ans Geldverdienen denken, Lesungen machen und jetzt sozusagen noch kurbeln, dass ich für Juni und Anfang Juli noch Leseeinladungen erhalte!	I have to think about earning money, do readings and some toiling to make sure that I receive invitations for readings in June and at the beginning of July!
(3)	wenn er dann weitertratscht steht er lächerlich da,	if he then retells [the story] he will seem ridiculous,
(4)	Und mein Freizeitspaß, je nach Laune, geht er mir aufn Wecker, frag ich solche Blödheiten, weil er dann abhaut, bin ich mal gut aufgelegt, erzähl ich dem das Innenleben der Hure und ihren Kunden in Einzelheiten, die ich selbst nicht kenne . . . aber dann sind die glücklich und mich können sie dort wo ich nach dem Durchfall eh nicht hinkomm.	And for fun in my free time, depending on the mood, is he annoying me, I ask such stupidities, because he will then go away, if I'm in a good mood, I tell him about the inner life of the whore and her clients in detail, which I don't know myself . . . but then they are happy and they can shove it where I can't reach after the diarrhea anyways.
(5)	Heft 9 wird Ende Mai/Anfang Juni erscheinen, wenn nichts passiert, bzw, ich die finanz. Rückendeckung zusammenbringe.	Volume 9 will appear at the end of May/beginning of June, if nothing happens, and if I manage to build up financial reserves.

Table 4. Examples of indirect cause-and-effect statements.

	German	English Translation
(6)	bei sachlicher und rationaler Abwicklung, Punkt für Punkt, kann nichts passieren	with factual and rational handling, point by point, nothing can happen
(7)	Die selbstgewählte Isolation vom Tagesgeschehen im Knast hat sich gelohnt,	The self-imposed isolation from events of the day in prison have paid off,
(8)	[ich] halte mir zugute, etwas dafür getan zu haben.	[I] grant myself that I have done something for it.
(9)	nichts in den letzten Jahren war umsonst!	nothing in the past years has been in vain!
(10)	Vergiss bei all dem nie, wichtig ist die Ichperson, die Selbstbestätigung, solange Du immer wieder versuchst, so zu sein, wie es andere gerne hätten, [. . .] wirst immer nur Marionette sein,	Never forget in all of this, important is the I-person, the self-affirmation, as long as you keep trying, to be, as others would like you to be, [. . .] you will always only be marionette-like,

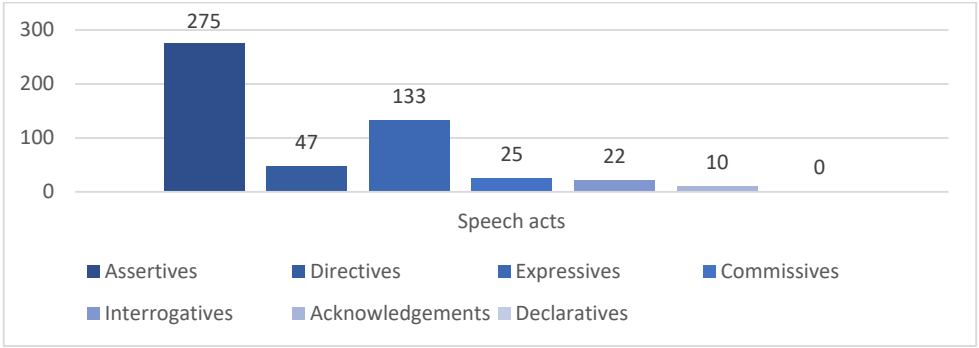

Figure 2. Absolute frequencies of speech acts.

Directive speech acts are observed in various forms in the dataset. A classic distinction regarding speech acts is made between direct and indirect ones. According to Holtgraves [120], for instance, direct speech acts are those in which the propositional content matches the speaker's meaning. This is not the case for indirect speech acts in which speaker meaning and sentence meaning diverge. In the present dataset, this distinction is not enough to capture the subtle effects of the employed directive speech acts. Rather, it is valuable to examine the directives in terms of their involvement of the addressee, i.e., whether they are personal or impersonal directives (Table 5). This distinction allows for a more objective classification of directives, as its main focus is not on the speaker's or the writer's intention (which can never be known for sure), but on the presence or absence of the addressee in the utterance.

Table 5. Personal directive speech acts.

	German	**English Translation**
(11)	tummel dich mit deinem esoterischen Buch	hurry up with your esoteric book
(12)	bis Dez. 85 schick/Texte!!	until Dec. 85 send/texts!!
(13)	behalte es, wenn Dus gut findest, Du stark genug bist, schicke es weg,	keep it, if you like it, if you are strong enough, send it off
(14)	Schreibe mit Herz, ohne Hemmungen.	Write with heart, without inhibitions

Examples (11) to (14) illustrate the use of personal directive speech acts, while Examples (15) to (17) show impersonal (or generic) directive speech acts. The personal directives are used to either instruct the addressee to do something, to suggest something, or to provide advice. In contrast, the impersonal directives found in the letters are rather generic instructions (Examples (15) and (16)), or indirect prompts to action, as in Example (17) in Table 6.

Table 6. Impersonal directive speech acts.

	German	**English Translation**
(15)	am besten, ich krieg eine Telefonnummer und rufe zurück,	it's best if I receive a phone number and call back,
(16)	Unter der Telefonnummer: XXXXX (Bürozeiten) kann man mich entweder ab Anfang Juni erreichen, bzw, erfahren, wo ich erreichbar bin.	Under the phone number: XXXXX (office hours) one can reach me either at the beginning of June or find out where I can be reached.
(17)	les ich bald mal wieder was?!	will I read something again soon?!

These examples highlight the difference between personal directives, in which the addressee is mentioned directly, and impersonal directives, in which generic formulations are employed. It is of great importance in the context of this paper that while there are no clear-cut boundaries between the use of personal and impersonal directives in terms of the chronological progression of the letters, differences in use are nevertheless observable: in the first letters and postcards, personal and impersonal directives are used with equal frequencies, while the last two letters in particular only contain impersonal directives, as illustrated in Examples (15) and (16) above. The importance of this finding and its relation to psychological distancing, as well as self- and other presentation, will be discussed at a later point.

The directive speech acts used by Unterweger serve to make the addressee behave in a certain way, such as to elicit further interaction or texts, or to assist with tasks (such as presenting his journal in public), which is indicative of his dependence on other people and highlights his manipulative behavior.

4.1.2. Empathy

Subsequently, the use of positive and negative emotion words, as well as the (syntactic) perspectives taken by Unterweger, will be considered. The analysis was undertaken with a software called Linguistic Inquiry and Word Count or LIWC-22 [104], which is designed to facilitate the analysis of language in relation to psychological dimensions. Thus, for this paper, LIWC-22 is used to automatically identify words with positive and negative affect in the Unterweger corpus. Negative emotion words (3.46% of all tokens) are less frequent than positive emotion words (4.45% of all tokens). Interestingly, most negative emotion words relate to anger (0.63%) and sadness (0.56%).

Regarding the points of view taken in the texts, it has to be mentioned that the letters are largely written from Unterweger's perspective—this, however, is an expected feature of the genre [121]. However, it is interesting to more closely examine the instances in which Unterweger reports the feelings or voices of others or else can be considered to show empathy [97,101,103]. In total, eleven instances were identified in the texts that are of interest to this paper, six of which are taking into account other people's perspectives and feelings (such as in Examples (21) and (22)), and five of which are reflective of his own feelings (Examples (18) and (20)), but suggest some empathy by showing apparent understanding of other peoples' feelings (see Table 7).

Table 7. Empathy: own perspective.

	German	**English Translation**
(18)	ich akzeptiere es vollkommen wenn jemand den Kontakt in Zukunft mit dem FREIGELASSENEN Jack Unterweger abbricht, weiterhin nur schriftlich, telefonisch aufrechterhält.	I completely accept it if someone breaks off the contact with the RELEASED Jack Unterweger in the future, keeps it only in written or by telephone.
(19)	Ich kenne Menschen (Nachbarngetuschel) zu gut, und verstehe jede Haltung.	I know people (whispering neighbors) too well, and understand every attitude.
(20)	Aber ich weiß, Du willst was anderes sagen, ich versteh Dich und steh da etwas ratlos rum	However, I know you want to say something different, I understand you and stand by baffled
(21)	Ich versteh Dich ganz gut.	I understand you very much.
(22)	dass ich ein Typ bin, der sich unbewusst sofort auch in den anderen hinein zu denken versucht,	that I am a type who immediately subconsciously tries to put himself into others' shoes,

In Example (22), he even suggests that he is an empathic person by claiming that he "tries to put himself into others' shoes" to understand them. In fact, some researchers argue that psychopaths actually do feel empathy (e.g., with their victims), but that they enjoy the negative feelings or pain they cause [122]. It goes beyond the scope of this paper to address this issue in detail, but future research might benefit from investigating this phenomenon further.

Table 8 presents examples of Unterweger considering the perspective of other people. The use of direct speech without quotation marks, as in Example (23), can be seen as a form of impersonation in which Unterweger takes on the role of another person and tells their story from a first-person perspective. In Examples (24)–(26) and (28), in contrast, he ascribes feelings to others, the accuracy of which are unknown.

Table 8. Empathy: others' perspective.

	German	English Translation
(23)	. . . hab soeben mit einem, 21, schluß gemacht, bin ein jahrmit ihm . . . die mutti versteht sich gut mit ihm . . . aber nun fing der an von verlobung und zusammenleben zu reden . . . da fiel mir auf, wie fad und gewöhnlich der im grunde ist . . .	. . . have just broken up with someone, 21, was with him a year . . . mom gets along well with him . . . but he now began to talk about engagement and living together . . . that is when I noticed how boring and ordinary he actually is . . .
(24)	schön auch, wenns euch selbst gefallen hat.	great, if you yourselves liked it.
(25)	nur weil sie eben was erfahren wollen	just because they want to find out something
(26)	aber dann sind die glücklich	but then they are happy
(27)	ihm die Schönheit meiner Lotosblüte schenken . . .	give him the beauty of my lotos flower . . .
(28)	lieber nicht zuviel erwarten, dann freuen oder nicht enttäuscht sein.	better not to expect too much, then look forward to it or nor not be disappointed.

4.1.3. Psychological Distancing

Subsequently, an overview of the findings related to linguistic features of psychological distancing will be provided. Firstly, the use of 1PPs and 3PPs will be examined in detail, followed by an examination of hedging devices. Kross and Ayduck [56] and Kross et al. [57] have suggested that 1PPs are reduced in psychologically distanced texts. In the present dataset, however, this is not the case. In fact, 1PPs are used almost five times as often as 2PPs, which occur at a rate of 31.8 times per 1000 words. The lemma "I", in contrast, is used 150.2 times per 1000 words, whereas the lemmas "he" and "she" are used 17 and 26.9 times per 1000 words, respectively. While it is possible that these findings are due to the nature of the texts (i.e., personal letters; see [123]), a comparison with two of the most similar available corpora(a (usually large) collection of naturally occurring texts [124]) reveals that this might not be the case (see Figure 3): in a corpus of 170 letters written by soldiers consisting of 96,023 tokens [125], only 31.8 1PPs per 1000 words are found, and this difference to the Unterweger corpus is highly statistically significant ($p < 0.001$). χ^2 tests were performed with R [126] and the p-values have been corrected for multiple comparisons with a False Discovery Rate (FDR). A second corpus of letters from the German Democratic Republic (GDR) comprising 80,556 tokens [127] was also included in the analysis. The difference in the use of 1PPs between this and the Unterweger corpus is also statistically significant ($p < 0.001$). Even more striking is the difference in pronoun use between the Unterweger corpus and a large-scale reference corpus, the DWDS-Kernkorpus 1900–1999 [128], which comprises 121,494,429 words. In this corpus, 1PPs appear only 6.6 times per 1000 words ($p < 0.001$). Meanwhile, 2PPs appear with a similar frequency in the soldier letter corpus (i.e., 6.1 times per 1000 words) but much less frequently, i.e., 1.95 times per 1000 words in the GDR letter corpus. However, the differences from the Unterweger corpus are statistically significant ($p < 0.001$). The 3PP lemma "he" (A lemma is a word form that includes all inflected forms of the respective word (e.g., the lemma "he" also includes "his" and "him", and the lemma "she" includes "her" and "hers", etc.) appears 4.8 times and the lemma "she" appears 8 times in the soldier corpus; 1.97 and 1.3 times, respectively, in the GDR letter corpus; and 8.7 and 8.5 times, respectively, in the DWDS reference corpus. Thus, 3PPs also appear vastly more frequently ($p < 0.001$) in the Unterweger corpus than in the comparison corpus.

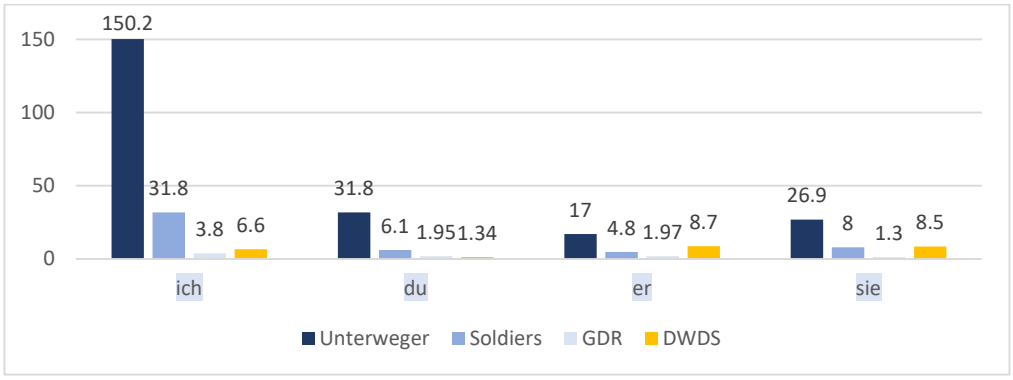

Figure 3. Comparison of normalized frequencies per 1000 words of 1PPs and 2PPs across corpora.

Kross & Ayduk [110] have noted that "psychologically remov[ing] from the self" (see also [57]) also works through the use of one's own proper name instead of a pronoun. This strategy for self-distancing is also found in the dataset, as shown in Examples (29) to (33) in Table 9.

Table 9. Self-distancing through generic pronouns, 3PPs, and proper names.

	German	English Translation
(29)	weil man ja weiterdenkt, wie gings weiter . . .	because one thinks ahead, how did it go on . . .
(30)	[sie] wollten dafür zwei Geschichten vom Autor JU	[they] wanted to have two stories by author JU
(31)	Aber für die ist es eben exotisch wie ein Häfenbruder das alles und dazu viele gute Menschen erreichen kann aus seiner Lage . . .	However, for them it is exotic how a jailbird does all this and reaches so many good people from his position . . .
(32)	dass es einen Unterschied macht, dem Häftling zu schreiben, ihn im Knast zu besuchen oder in Freiheit zu begegnen . . .	that it makes a difference to write to the inmate, visit him in jail or encounter [him] in freedom
(33)	wenn jemand den Kontakt in Zukunft mit dem FREIGELASSENEN Jack Unterweger abbricht,	and if someone breaks off the contact with the RELEASED Jack Unterweger in the future

Another phenomenon of psychological distancing can be observed with the dropping of pronouns. Though it is a topic-drop language (e.g., [129]), the standard variety of German is not considered to be a pro-drop language. Nevertheless, pronoun dropping does occur in uncodified varieties and dialects of German (see, e.g., [130,131]). Unterweger sometimes also uses null subjects instead of 1PPs and 2PPs. The identified instances of 1PP dropping reflect common forms of pronoun dropping in colloquial German and German dialects, such as "freu mich schon" ("looking forward to") instead of "ich freu mich schon" ("I am looking forward to"). In line with Rabon and Chapman [132], it might be argued that the dropping of pronouns can be seen as withholding commitment and thus as psychological distancing.

Hedging, another linguistic form of creating distance between oneself and the proposition of an utterance, is not very common in the dataset: only 12 instances (i.e., 2.2 per 1000 words) of hedging were identified. Examples of hedging devices are: "bisserl" ("a bit"), "ein wenig" ("a little"), "eher nicht" ("rather not"), "vielleicht" ("maybe"), and several subjunctive forms that can also be interpreted as linguistic politeness strategies (see, e.g., [133]).

4.1.4. Coherence

One striking feature of the letters is the passages that display a high amount of incoherence, which is particularly noteworthy, since Unterweger was considered a well-known writer during his time(even though doubts about his literary abilities, however, have arisen more recently [134]). In total, 36 passages were identified that contain highly incoherent sentences, unconnected thoughts, and asides with or without changes of perspective, as discussed above, some of which are reminiscent of stream of consciousness techniques. The incoherence in these identified passages is created in different ways. For instance, as illustrated in Examples (34) and (35), it is the concatenation of thoughts that are not entirely unrelated but appear like inner monologues (see Table 10).

Table 10. Simple incoherence.

	German	**English Translation**
(34)	Und was mir nicht zusagt, auch von der Aussage her falsch ist, sich aber immer wieder findet, warum wohl, um zu zeigen, schaut, ich bin anständig,- . . .	Additionally, what I do not like, also is wrong, but reoccurs throughout, I wonder why, to show, see, I am decent,- . . .
(35)	Zu Dir, diesem Buch, was ich dazu, kurz nur, ich las es weniger als Kritiker, für mich war es ein Buch einer Person, die mich akzeptiert . . .	About you, the book, what I, only briefly, I read it less as a critic, for me it was a book of a person, who accepts me . . .
(36)	Ein anderes, wenn Du es auch als bereinigt ansiehst, Problem (. . .)	A different, even if you view it as solved, problem (. . .)
(37)	unbewusst, 58 bis 62 lebten wir in einem Zimmer . . . jetzt las sie was in der Zeitung . . . fragte . . . Erinnerung.	subconscious, 58 until 62 we lived in one room . . . now she read something in the paper . . . asked . . . memories.
(38)	höre neben dem Briefeschreiben gerade, Gedanken, Marylin Monroe [sic], nackt sah ich wie jedes andre Mädchen aus . . .	hear while writing letters just now, thoughts, Marylin Monroe [sic], naked I looked like any other girl . . .

Incoherence is also exemplified by Example (36), which shows a separation of a noun phrase; in Example (37), through the listing of words that appear to be connected thoughts in Unterweger's mind, but the connections of which are not readily available to the reader; and through Example (38), which also appears like a string of thoughts and experiences induced from his environment. These examples are illustrative of rather simple forms of incoherence.

In contrast, Examples (39) and (40) in Table 11 illustrate more complex forms of incoherence; for example, the stretching of thoughts through intervening phrases and additional information, as well as asides. In this respect, Example (39) is very complex, and the incoherence is the result of several different issues. For instance, in (39), Unterweger begins the sentence with "Inzwischen habe ich mit dem Mädchen" ("In the meantime I have with the girl") but interrupts its completion with detailed descriptions of the girl and an impersonation of her speech (see Example (23) above). Only after these intervening passages does Unterweger provide the verb complementation for "habe ich" ("I have"). The initial sentence in Example (40), in contrast, is never finished, and it thus remains unverbalized and implicit why the addressee must not be disappointed or angry. Further, Example (40) exhibits a break in the train of thought after " . . . bis etwa Mitte Juni"/" . . . until the mid of June", which again illustrates the concatenation of thoughts. In particular, it appears as if the rheme of one sentence is immediately taken up as the theme of the following sentence, which results in a constellation of clauses in which the final clause is disconnected from the initial one.

Table 11. Complex incoherence.

	German	English Translation
(39)	Inzwischen habe ich mit dem Mädchen, so groß wie ich, schlank, sieht eher wie 18 aus, sehr realistisch, selbstbewusst, erfahren in fast allen Lagen, auch Liebschaften (. . . hab soeben mit einem, 21, schluss gemacht, bin ein jahrmit ihm . . . die mutti versteht sich gut mit ihm . . . aber nun fing der an von verlobung und zusammenleben zu reden . . . da fiel mir auf, wie fad und gewöhnlich der im grunde ist . . .), eine schöne Beziehung, konnte ihr, nachdem ich mehr von ihr weiß, auch FEGEFEUER schicken, damit sie sieht, was Alkohol ausmacht im Leben, denn sie trinkt ganz gern bei Problemen . . . , etc., und auch, die Mutter, ein lieber Mensch, aber, wie soll ich sagen, schwach, auf jeden Fall zu schwach für dieses Mädchen.	In the meantime I have with the girl, as tall as I, slim, looks more like 18, very realistic, self-confident, experienced in all areas, also romantic involvements (. . . have just broken up with someone, 21, was with him a year . . . mom gets along well with him . . . but he now began to talk about engagement and living together . . . that is when I noticed how boring and ordinary he actually is . . .), a good relationship, was able to, now that I know more about her, send FEGEFEUER, so that she sees what alcohol does in life, because she likes to drink when she has problems . . . , etc., and also, the mother, a nice person, but, how should I say it, weak, in any case too weak for this girl.
(40)	Deshalb nicht enttäuscht, böse sein, wenn ich aufgrund all dieser Turbulenzen (Wohnungsfrage klären, Amtswege; einkaufen; von der Unterhose bis zum Kochgeschirr, Möbel, etc, und tausend andere Alltäglichkeiten, die erledigt werden müssen) ab sofort und wie ich es einschätze bis etwa Mitte Juni, um den 10. Juni will ich alles geschafft haben und mich dann endlich auf Menschen, Begegnungen (Tochter, Schwiegersohn, Enkelkinder, Bekannte, wichtige Gespräche wegen Arbeiten, Literatur, Lesungen) konzentrieren.	Hence, do not be disappointed, mad, if because of all these turbulences I (finding an apartment, taking care of official matters; shopping; from the underpants to the dishes, furniture, etc, and thousand of other banalities that have to be done) from now own and how I estimate it until the mid of June, around the 10th of June I want to have finished everything and can finally concentrate on people, encounters (daughter, son-in-law, grandchildren, acquaintances, important conversations about work, literature, readings).

4.2. Malignant Narcissism

Subsequently, the symptoms identified as indicative of malignant narcissism are analyzed in Unterweger's letters, starting with an illustration of self- and other presentation. This is followed by an analysis of swear words and the absence or presence of sensory and perceptual processes through the use of transitivity analysis.

4.2.1. Self- and Other Presentation

The use of 1PPs, 2PPs, and 3PPs will be contrasted and compared to shed light onto Unterweger's self- and other presentation. As Figure 4 indicates, the pronouns that appear most frequently in the letters are singular 1PPs, such as "I", "my", and "me", followed by singular 2PPs such as "you" and "your", while the 1P and 2P plural pronouns are rather uncommon. Even the least frequently used 1PP, the possessive, is used approximately 1.5 times more often than the most frequent 2PP. This finding highlights Unterweger's focus and preoccupation with topics involving himself and his own actions.

A closer investigation, however, reveals that Unterweger addresses Wolfmayr more often than is visible at first sight. That is, he uses 3PPs and generic formulations (e.g., "one") to address her. Examples thereof are provided in Table 12. This is an interesting phenomenon that ties in with the strategies of psychological distancing discussed above.

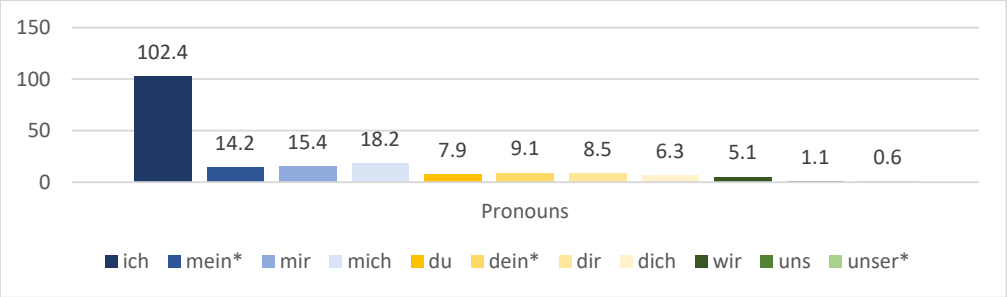

Figure 4. Normalized frequencies of 1PPs and 2PPs (singular and plural) per 1000 words.

Table 12. 3PP or generic address of the addressee.

	German	English Translation
(41)	wird hier ungeniert gesprochen, bzw geschrieben	here one speaks or writes unashamedly
(42)	warum schreibt sie so umständlich „schlafen“	why does she so inconveniently write „sleeping“
(43)	überall die Andrea → nur sie schweigt . . . ?!	Andrea is everywhere → only she is silent . . . ?!
(44)	verpflichtet aber die Andrea nicht zur Rechenschaft!	but does not oblige Andrea to accountability!
(45)	hier wieder eine völlig andere Andrea	here again a completely new Andrea
(46)	anrufen kann man mich immer	I can always be called [on the phone]

Figure 5 illustrates the normalized frequencies of 3PPs. It can be seen that with 25 instances per 1000 words, “she” appears most frequently in the dataset, followed by “he”, with 11.9 instances per 1000 words. In the objective and possessive forms, these pronouns are less common.

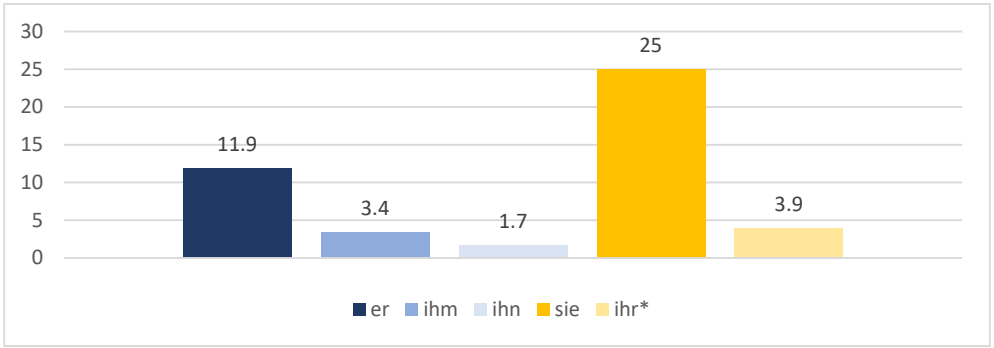

Figure 5. Normalized frequencies of 3PPs per 1000 words.

The raw frequencies of these pronouns are now taken as a starting point for the transitivity analysis that allows us to investigate in greater detail which roles the participants in the narratives assume, and how Unterweger perceives these roles. Figure 6 provides an overview of all types of processes identified in the dataset. It shows that the most common processes are of a material nature, followed by relational and mental ones, while verbal and existential processes are described less frequently. For the analysis of self- and other presentation, only the two most common processes, material and relational ones, will be investigated in detail here. The mental processes are examined below.

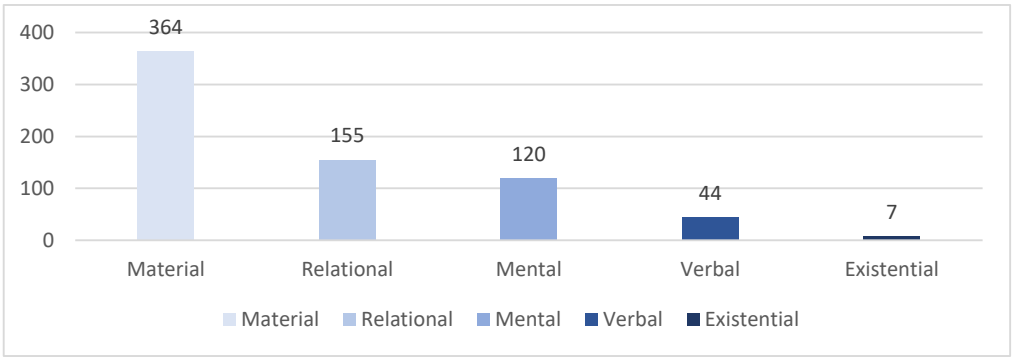

Figure 6. Absolute frequencies of types of processes identified in the dataset.

Figure 7 shows the relative frequencies of personal pronoun use in the position of the Actor in material processes and as the Token in relational processes. It is interesting to note that generic or 3PPs such as "she" or "one" are the most frequent Actors or Tokens in the material and relational processes, while 2PPs, in contrast, are rare. This indicates that Unterweger's focus in the utterances describing actions and events (material), or qualities and properties (relational) are people other than himself or the addressee, with the exception of the instances in which the addressee is referred to through a 3PP. In the material clauses, the addressee is often also only presented as the Actor in imperatives, in which Unterweger instructs his addressee to future actions.

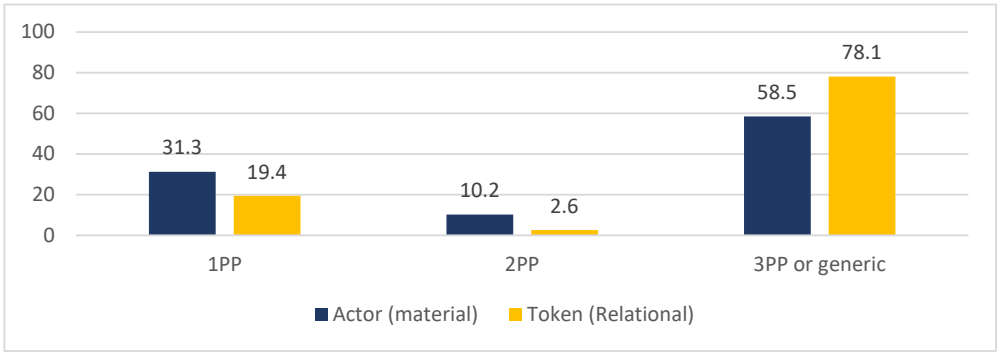

Figure 7. Relative frequencies of 1PPs, 2PPs, and 3PPs (generic) in main participant positions in material and relational clauses.

4.2.2. Swear Words

Only 12 words are identified in the corpus that can be considered swear words, which amounts to merely 2.2 swear words per 1000 words. In eight of these instances, Unterweger refers to other people (e.g., "idiots", "jerks", "wimps"). One is used as an intensifier ("verdammt"/"damn"), one as an adjective ("dumb"), one as a verb ("gripe"), and one as a noun in a colloquial phrase ("do not give a shit"). Thus, even though the swear words cannot be considered particularly strong or unusual, around two-thirds of all swear words are used to insult a third party.

4.2.3. Sensory and Perceptual Processes (Transitivity)

Lastly, consider the use of sensory and perceptual processes. It has previously been suggested that narcissists display a lower use of sensory and perceptual processes [82], yet the opposite has also been found [81]. In the present study, sensory and perceptual processes, as exemplified by mental processes, are the third most common process type identified. Figure 8 below illustrates which pronouns assume the position of the Experiencer in the mental clauses.

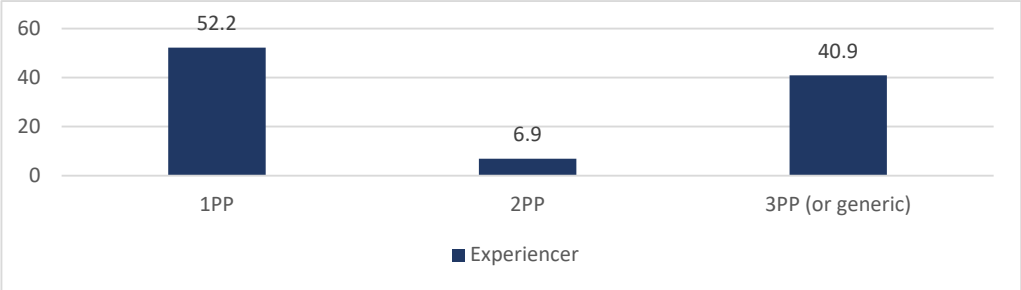

Figure 8. Relative frequencies of 1PPs, 2PPs, and 3PPs (or generic) in Experiencer positions of mental clauses.

It is worth noting that, in contrast with the material and relational processes in which 3PPs are the most common Actors and Tokens, Unterweger himself, through the use of 1PPs, assumes the role of the Experiencer in the mental clauses.

5. Discussion

Given that many of the findings from previous studies on the connection between psychopathy and (malignant) narcissism were either based on orally produced language in interviews or on language retrieved from social media platforms, it is unsurprising that not all previous findings were replicated in the present dataset. The dataset involved in this analysis is unique in that it provides insights into the language used in private letters of a psychopathic and narcissistic killer that were neither intended to be published nor prompted in a clinical or therapeutical setting.

In written texts, the author has more time to plan and consider sentences more carefully than in interview situations, although it has to be taken into account that Unterweger's letters were not typed on a computer, which would have allowed for endless reformulations and changes, but were either handwritten or typed on a typewriter. It is a limitation of the present study that the dataset is rather small and simultaneously covers a six-year time span, during which the language of individuals can potentially change (e.g., [2,135]); the extent of this, however, is unclear. However, it is a clear advantage of the present dataset that the addressee is kept constant, which reduces the effect of the audience on the language of the writer [136]. Future studies would profit from a comparison of Unterweger's written and spoken language competence, or his language used in letters addressed to other people.

As shown in the analysis, Unterweger's language shows several features that can be related to his diagnosis of psychopathy and malignant narcissism. It has to be mentioned, however, that several features can be taken to indicate several symptoms, and the boundaries are rather blurry.

The symptom of manipulation typical of psychopaths is found to be reflected in the use of directive speech acts. The addressee herself does not play a central role in Unterweger's discourse, however, as illustrated by the use of 2PPs and the use of 3PPs and proper names to address her. Even though direct addresses of the addressee are minimal in all letters, it is striking that the last two letters no longer address the addressee directly at all. In these letters, the use of generic formulations, even in directive speech acts, prevails. This finding might also be interpreted in terms of manipulation and instrumentalization: according to Hancock et al. [53], for example, psychopaths "appear to view the world and others instrumentally", which means that they "'use' others for material gain, sex, or power". Given that the letters in the present corpus have the same addressee, the temporal change in forms of address in consideration of the time frame might hint at the instrumental purpose the addressee had: she is no longer personally acknowledged as an addressee and her presence in the text declines after Unterweger had achieved his aims (i.e., his release from prison).

Some of the findings presented in this paper reflect previous findings. For instance, the use of 3PPs for oneself and other people [56–58] and the quick changing of themes

exhibited by a lack of coherence (e.g., [45,54,60,61]) were also identified in the dataset. In contrast with some previous studies (e.g., [103]), however, the present analysis did not detect a prevalence of negative emotion words, as is also the case for Hancock et al. [53]. Rather, the presence of positive emotion words was rather strong. Further, in contrast with Carey et al. [81], the present study did show a significantly increased use of 1PPs (i.e., I-talk) in the letters, which might be attributable to either the differences in text production (oral vs. written), to individual preferences, or to the different underlying diagnosis (i.e., narcissism vs. malignant narcissism). Future research will have to take these factors into account.

Research into this area at the intersection of psychology and linguistics might also profit from the application of artificial intelligence (AI) and Natural Language Processing (NLP) techniques. With these approaches, larger amounts of data can be processed, and the detection of language patterns can more easily be related to psychological parameters (see, e.g., [137]). Such research, however, will also require more data (i.e., naturally occurring texts rather than elicited ones) of psychologically disordered individuals in addition to data from psychologically healthy people, in order to make valid comparisons.

6. Conclusions

Even though the present research is not supposed to be regarded as a diagnostic tool, it has demonstrated that close language analysis of a psychopathic and narcissistic individual can provide valuable insights at the interface between linguistics and psychology (see also [4]), which needs to be investigated further. As "words can reveal significant insights about psychological functioning" [53], language analysis can hint at an author's psychological traits and should thus not be neglected in forensic linguistic analyses, particularly given the high prevalence of psychological disorders among offenders. A promising avenue for future research relates to the investigation of pronouns and cohesion/coherence in particular. However, more data are required to make this research and the related findings useful in practical forensic casework, as casework demands a robust body of research on a variety of texts and conditions, produced by a variety of individuals. The present analysis wishes to inspire such similar investigations.

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