

The Role of Graphology in Identifying Personality Traits of Hell in Saudi Youth Inmates

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ABSTRACT

This paper investigates the possibility of using graphology to identify “hell traits” among young detainees locked up within the remand centre of Hail City, Saudi Arabia. A qualitative design was employed, involving interviews with participants and the collection of handwriting specimens. The study surveyed 15 detainees over the age of 18 who agreed to participate. Ethics approval was obtained by the Research Ethics Committee of the Universiti Sains Malaysia (USM) (Approval Number: USM/JEPeM/21110758). Data were analysed by combining content analysis with handwriting analysis. The handwriting test made use of amplification equipment to analyze a range of traits, such as word and line spacings, page margins, alignment, pen pressure, pen tilt or incline, letter size and positioning, movement characteristics, and directional leanings. The results unveiled the existence of “hell traits” in the handwritten responses. Such traits were behaviourally predictive, specifically predicting negative dispositions that potentially lead individuals toward impulsive behaviour or crime.

Contribution/Originality: This study contributes to the existing literature by applying graphology to identify “hell traits” among youth inmates in Saudi Arabia. The paper’s primary contribution is documenting behavioral indicators in handwriting that may predict criminal tendencies. This study is one of the very few that investigated graphology in the Saudi context.

1. Introduction

Graphology is indeed a study of writing. It is an experimental science that brings to light a person's innate graphic movements, character, temperament, intellectual behaviour, professional and social skills, and an individual's obsessed inner special talents through writing. Its particular analysis provides a psychosocial-behavioural portrait. This, furthermore, is similar to psychologists' work, which is limited to considering only the interaction between the psychological and biological aspects reflected in a person's

writing (Julia, 2015). Graphology is a word that was coined for the first time in Paris by Abb Jean-Hippolyte Michon, founder of Graphology Society and also the first to provide a scientific rationale to the writing analysis (Mishra, 2017). Graphology is also employed in psychiatric experiments, where graphological examination is part of a set of diagnostic instruments (Schäfer, 2016).

Forensic investigators employ it to determine an individual's personality traits through their handwriting patterns and through technological analysis. Graphology is employed in various social agencies to support a range of activities, including verification and motivation of different workers and child behaviour. It also extends to application development, employment recruitment procedures, marital compatibility, and career counselling (Huber & Headrick, 1999). The same authors had proven in a comprehensive handwriting analysis study that examined forensic evidence. Analysis of handwriting from physical evidence is conducted due to physical evidence's crucial vitality (Harralson & Miller, 2017).

Handwriting experts regularly review samples from a wide range of sources to discern behaviors that indicate particular personal traits. Beyond conventional manual analyses, new technological developments have provided professionals with tools to aid in carrying out this otherwise time-consuming procedure. Factual studies have substantiated that handwriting analysis is an effective tool to use in assessing personalities (Mishra, 2017).

Preceding work on calligraphy and chirography tended to be lengthy and based on human scoring before the advent of modern analytical instruments. Lewison-Zubin provided important work that reinforced the strength of experimentally oriented methods in this field. An interesting factor analysis of Lorr et al. (1954), who revealed four principal dimensions of writing: letter width in upper and lower zones, letter length in these zones, character Height in the mid-zone, and a tendency of lines of writing to slope upwards on the page.

Trends in crime in Saudi Arabia and other Arab countries exhibit distinct patterns that differ from those in Western societies, particularly in terms of type, prevalence, and underlying motives. Western European scholars tend to categorise their crimes holistically, paying special emphasis on religious crimes, culture-based crimes, and their correspondence to law enforcement structures. Criminal cases from Arab settings tend to be primarily cross-cultural and are dealt with locally within the police jurisdictions. Although some overlap is found in the realms of overlap, two settings vary significantly in terms of the methods employed, spatial and temporal aggregation, as well as the socioeconomic contexts that prompt such crimes (Alotaibi et al., 2019).

Explaining further, routine activity theory and the pattern of crime from standard environmental criminology theories were developed (Sutton et al., 2021). And these can assist in the investigation of such crimes. Therefore, the Western context in which these theories originated differ significantly from the Arabian context. Additionally, there is still a dearth of literature in this regard particularly in the middle east as no research has sought to assess the validity of these theories within a different cultural background (Alotaibi et al., 2019). This is a gap which the current study hopes to bridge.

The Vision of Saudi Arabian Kingdom of 2030 is to reduce crime rates to a very low level. It also seeks to develop necessary measures through the determination of hell traits and

early detection of criminal tendencies. Hence, this study is in line with Saudi Arabia's vision of early detection of criminality using graphology especially among the youth population who are the pillars of social, political, and economic construction. The youth within the context of Saudi Arabian Kingdom are persons between the ages of 18 to 25. Thus, this study investigates the determination of hell traits and early detection of criminality among the youth using graphology which appears as a novelty in the modern field of criminology.

1.1. Research Objectives

The aim of this study is to examine the application of graphology to determine the hell traits among the youth inmates detained in Hail city, Saudi Arabia.

2. Literature Review

Graphology has been widely applied to evaluate personality traits by examining handwriting patterns. Several techniques exist for this purpose, including graph analysis, a proprietary approach, and others that vary according to the examiner's objectives. Despite differences in application, each method is based on underlying theoretical premises (Driver et al., 1996).

McNeal (1967) was quoted by Driver et al. (1996) to put emphasis on how that handwriting characteristics actually reveal some aspect of personal character and give useful indications when interpreted appropriately by qualified graphologists. Driver et al. (1996) work detailed a three-step model which reveals the overall graphological practice.

- i. Collecting a handwriting sample that contains a broad range of letter forms, including capitals, ideally between 5 and 100 words in length.
- ii. Evaluating the sample against a set of criteria, which may differ depending on the graphological school of thought.
- iii. Synthesising and interpreting the results by comparing and combining the observed characteristics (Driver et al., 1996).

Within organizational settings, handwriting analysis has occasionally been employed as part of personnel decisions. Employers may use graphology alone, or alongside other methods, to guide choices about hiring, promotion, reassignment, training, or termination. The rationale is to establish correlations between personality traits and job performance, thereby selecting candidates most likely to succeed in specific roles (Roberts et al., 2007).

Antony and Cap (2008) also found through research that handwriting has both physiological and psychological aspects. Writing is a spontaneous action that people use to express their thoughts, and it involves many of its script aspects that can quantitatively be analysed through graphometric methods. Handwriting as an acquired motor skill is a result of a person's distinct expression and style of expression. While writing, the quick and mostly unconscious movements of hands and fingers create typical patterns that are quite distinct from more intentional gestures, such as drawing or even painting. Notably, graphometric indices are quite steady as well as reproducible from test to test, and that particular rhythm as well as velocity of a person's each individual's strokes that make it virtually impossible to forge without being identified.

In this research, the researchers studied some of the primary handwriting traits. Previous studies have proven that it is possible to learn various traits and combinations of traits. Any written specimen depicts descriptions of personality and predictions of behaviour. Nevertheless, a written specimen cannot explain the reason. It has been recognised that there is a therapeutic benefit in destroying a written specimen where a person has expressed emotionally charged issues and concerns.

Modifications in personality traits can be influenced through the practice of controlled handwriting, which involves repeated and deliberate writing exercises. A standard recommendation for behavioural adjustment is to adhere to a structured writing routine for approximately thirty days, dedicating around twenty minutes daily. Handwriting outcomes, however, are also sensitive to a variety of external and internal factors, including the influence of medication, illness, situational stress, menstruation, electroconvulsive therapy, confinement, traumatic experiences, ageing, hypnosis, and fatigue. Individuals subjected to these situations tend to exhibit marked alterations in their handwriting that mirror personality changes (Antony & Cap, 2008).

A previous study in 2010, conducted by Enzmann et al. (2010), launched a Second International Self-Reported Delinquency study (ISRD-2). Although delinquency self-report surveys have been a staple of delinquency research for over half a century, these studies have usually been confined to one or at most a handful of countries such as Sweden and England (Wikström & Svensson, 2008). One of the central aims of the ISRD-2 project was to conduct cross-national comparisons of juvenile crime within the European context. The study also sought to provide insights into the prevalence and patterns of self-reported delinquent behaviour and youth victimisation among adolescents aged 12 to 15, corresponding to grades 7 through 9. It is nevertheless important to understand the international variation of delinquency trends to test the generalizability of different theories. ISRD-2 data makes it possible to examine the causes of crime and to determine the degree to which crime causation hypotheses are held across nations. Various workers, and child behaviour and growth. Forensic specialists analyse vast portions of handwriting samples from known/control and unknown/suspect sources to identify handwriting features related to specific characteristics. In addition to a person's analysis of handwriting samples, various technologies and methods have been created to help hand writers perform this mind-numbing function.

In this regard, scholars have identified that it is feasible to use forensic graphology when dealing with investigations of handwriting on ransom letters, blackmail letters, and threat letters. This evidence is useful when conducting investigations because it is useful in understanding a writer's mental status, useful in ascertaining identity, and useful in creating a criminal profile (Mishra, 2017).

The fledgling psychopath theory is utilised as a framework in this study. Although graphology is a scientific study of handwriting, the criminal behaviour of an individual is determined by personality characteristics such as fledgling psychopath. It is used when ransom notes, signatures, letters, and other bad things are not found in the usual scenario. In the event of formal debunking of signatures fixed on contracts, forensic documents investigation is requested in civil law cases. Forensic graphology is also beneficial in all the cases in which handwriting is used to commit a crime, because it becomes important to determine the authorship of a piece of handwriting. This method can help to solve any activity obtruding criminal liability and responsibility (Mishra,

2017). To determine individual personality characteristics, graphologists use handwriting patterns. Graphologists research vast portions of handwriting samples from known/unknown suspect sources to establish handwriting features that relate to characteristics. In addition to the handwriting analysis of samples by individuals, various terminologies have been created to assist handwriting experts in carrying out their tasks. This study validates handwriting analysis using different experiments as a form of personality evaluation using fledgling psychopaths (Mishra, 2017).

3. Research Methods

The qualitative method is applied in this study, and the data collection was conducted by using interview tools. On this basis, the researchers used a semi-structured interview. By performing in-depth interviews, the researchers managed to understand the words of the participants, which are likely to require concerted efforts to learn the meanings of the words and phrases of the participants involved in the study. The interview guide does not monitor the line of questioning but allows the researcher to expand continuous mental energy by probing the participants during the interview session (Yin, 2015).

Each interview session took not more than an hour. All interviews were audio-recorded with the participants' permission, ensuring compliance with ethical considerations (Blaikie & Priest, 2019). During fieldwork, the researcher learnt to effectively have objective analyses and reliable conclusions (Spradley, 1979).

Handwriting samples were collected from the 15 remand home inmates. The respondent's age must be at least 18 years. Data collection was done with the respondents' consent. Ethical clearance for the study was granted by the Universiti Sains Malaysia (USM) Research Ethics Committee under approval number USM/JEPeM/21110758. Participants were requested to provide short handwritten passages, which were subsequently examined by the researcher using graphological expertise.

However, the manual analysis depends on the graphologist's experiences and observations. Upon receiving the handwriting sample, the investigator looked for different handwriting features and tried to classify them in the course of examining the personality of the writer. Meanwhile, some of the significant characteristics are as follows: i. Word Spacing ii. Line Spacing iii. Page Margins iv. Alignment v. Pen Pressure vi. Slant vii. Size and Position of Letters viii. Movement ix. Headings, and x. Tendencies towards right or left.

All the ten (10) traits mentioned above have significance and should be carefully studied and remembered as it helps to assess the writer's personality in the course of the research (Poizner, 2012).

The study population comprises all the youth in Hail City in the Kingdom of Saudi Arabia. The target population must be at least 18 years and above within the range of the youth classification. Another population segment that was contacted in the study is social observation house youth inmates who are being remanded in house custody who demonstrated their willingness towards achieving the common research objectives.

In addition, due to the type of study population as well as the absence of a defined sampling frame, non-probability methods were used by researchers; that is, purposive

and snowball sampling. This approach was adopted to allow participants with varied backgrounds and perspectives to access participation. In purposive sampling, no predefined rule is applied when selecting respondents. Because qualitative research is capital-intensive, it often requires small sample sizes. There is no single way of selecting the respondents in purposive sampling. As qualitative methods are resource-intensive, the use of smaller samples is always necessary.

The samples are likely to be selected in a deliberate way. The goal or intent of selecting particular study units shall have those which offer the most important and abundant data (Yin, 2015). Thus, Creswell (1998) suggested that the qualitative research sample size must be between 5-25 for qualitative approaches. Meanwhile, on this basis, the sampling strategy is targeted by taking purposive sampling. The number of respondents is 15. They are distributed as follows:

- i. Fifteen (15) youths (who must also be at least 18 years old) are selected from the Social Observation House in Hail City, Saudi Arabia.

As mentioned above, the study employs qualitative research approach. This involves data collection and handwriting analysis. The researcher met with the respondents in face-to-face interview sessions. Respondents were provided with papers to write a free topic that does not exceed eight lines. The handwriting of the target respondents was later analysed.

Once they have agreed to participate, a date and location were chosen based on the participants' preferences. According to the Informed Consent Form provided for the study, the researchers described the research to the participants at the start of the interview.

This work employed content analysis techniques to analyse the collected information. Content analysis is indeed known as a systematic method of identifying, explaining, and reporting themes in qualitative data. Not only that, it explains a controlled description of the dataset, but it also allows further interpretation of the research object (Braun & Clarke, 2006; Brooks et al., 2015; Kuckartz & Radiker, 2023).

Interviews were conducted in Arabic among the three groups of respondents and tape-recorded with their permission. These tapes were later transcribed into English and combined with existing English fieldnotes to create a harmonious and complete set of research material.

The activity of coding, which the author of this dissertation conducted, comprised a constituent part of the qualitative analysis. Coding involved the systematic integration and classification of interview material without forfeiting interconnection among diverse units of information from the data. Handwriting sheets, on the other hand, were analysed by special instruments, such as magnifying glasses, to reveal characteristic tendencies, signs of stylistic patterns, and regularities. Based on such results, the author derived personality profiles of all respondents.

The reliability of the analysis was grounded in the work of Robert Saudek, who conducted and meticulously documented a series of controlled experiments on handwriting. Saudek established the most comprehensive foundation for experimental handwriting research, which he detailed in his fully illustrated book, *Experiments on Handwriting*. Matley emphasized, in his lectures, "*If one is unfamiliar with Saudek, one*

does not truly understand handwriting. However, if one knows Sawdeck and comprehends his work accurately, one begins to understand handwriting scientifically." (Joseph, 2019).

4. Results and Discussion

This study answered the research question and achieved the objective which is: the application of graphology to determine the hell traits among the youth inmates detained in Hail City, Saudi Arabia. The researchers analysed the handwriting sample of the respondent and found the connotations that revealed hell traits in the handwriting which include the presence of a personality characterised by aggressiveness and violence, stubbornness, nervousness, and sharpness. As the connotations of these features were repeated in the handwriting in many places and confirmed by other indications that were linked to each other and refer to features of violence, aggression, and strictness in dealing through the intersection of letters and sharpness of writing letters. The respondent's handwriting indicated an extra-large letter size, which is concomitant with selfish and self-obsessed tendencies. A tendency to overstretch the end of a letter into the adjacent body letter reveals the character as complex, as well as set in their outlook, positive or negative, indicating a stubborn personality. The presence of hell tendencies was also evident in the handwriting, indicating a leaning towards aggressive behaviour rather than moderation. Additionally, the presence of one or more such tendencies, coupled with an environment favourable for it, could increase the likelihood of committing a crime without remorse (Kowal & Gupta, 2021).

The graphological analysis of an 18 years old suspect, currently being held in a remand prison for taking part in a fight, found several graphological signs that correlate to so-called "hell traits." Analysis revealed some typical traits, such as the crossing of the letter S and its stretching of the closing stroke, which indicated tendencies towards stubbornness and rigidity. The lack of margins near writing lines along its vertical edges indicated a weakness in planning abilities as well as an inability to form valuable social connections. Other signs were present, including hooks in letter configurations to indicate susceptibility to outside pressure, and evenness of letter size to reveal indifference and a lack of regard for consequences. Moreover, "flying letters" signs suggested instability of mood, extra irritability, and a tendency to anger that could lead to instantaneous and snappish reactions. The appearance of a dot in some letters as they appeared in initial positions suggested a sign of jealousy. Collectively, these traits indicate a personality profile characterised by irritability, unusual jealousy, volatility, and a low provocation threshold, all of which are consistent with what Brook and Chillis (2008) label as "hell traits". These are generally linked to emotional control problems and a predisposition to impulsive and unprogrammed responses during angry outbreaks (Kashdan et al., 2016).

The researchers analysed the handwriting sample of the 18 years old respondent who was detained for fighting and found the connotations that revealed hell traits in his handwriting. Such traits include the connotation of the presence of dots in the letters which indicate jealousy. The connotation of the tendency of the line in the opposite direction of writing from 100-140 degrees indicates the introvert trait and fear of criticism which shows that the person is antisocial. The connotation of handwriting in an oblique direction opposite to the direction of writing indicates the trait of emotional withdrawal, which means that the person rarely shows his emotion and feelings. There is the connotation of writing capital letters sharply or with acute corners which indicates an aggressive trait. The connotation of flying the stick of the letter refers to the

trait of sensitivity to criticism, thus the person may push to commit any unexpected reactions to those who criticize him. Moreover, through the foregoing connotations, it revealed the presence of a personality characterised by aggression, violence, introverted trait and fear of criticism, in addition to emotional withdrawal, which explains that a person rarely shows his emotions and feeling as a result of emotional trauma which makes him withdraw to himself (Spytska, 2024).

In the subsequent subject, handwriting inspection on an 18 years old prisoner who was incarcerated for the offence against a police officer indicated some litotes of hell characteristics. Thin margins on the left- and right-hand sides indicated deficient planning, yet a dot on commencement letters denoted jealousy. A cut letter "S" in two teeth was a sign indicating a lack of concentration, and a keen letter was a sign that showed violent tendencies (Lucas, 1996). Capitalisation characteristics were attributed to social characteristics; however, the addition of letter stems in other letter bodies was indicative of tendencies towards self-punishment (Raveendran, 2022). Closing letters on word commencement was indicative of secrecy and concealment. Conversely, semi-circular hooks on commencement letters that lower downwards were a sign indicative of shyness as well as concealed feelings. Letters written uniformly indicated indifference as well as a lack of foresight. These characteristics together portrayed a conservative yet ill-structured personality with a tendency toward nervousness, aggressiveness, and an unflinching lack of frankness in emotions. While the interviewee seemed reserved when contacted, practical actions might reveal contradictions. The convergence of these indicators highlights the presence of "hell traits", negative tendencies that predispose individuals to problematic or reckless actions (Singer, 2016).

Researchers analysed a handwriting of an 18 years old respondent who was imprisoned in a remand prison for attacking police officers. Analysis revealed several graphological signs ascribed to "hell traits." They included sharp letter formation that indicated irritability and nervousness. Dots in letters appearing from the outset were treated as an excess of pathological jealousy. Triangular gaps in letter configurations predicted a penchant for rapid temper and violent outbursts. Writing across nearly all lines was associated with objectivity and a practical mindset, whereas reduced side margins reflected poor planning and organisation. Another marker, placing a dot of a letter to its right of a letter body, corresponds to past attachment, traditionalemia of thought, and an interest in symbolic or fantasy texts that might mold a writer's psyche. Collectively, these traits suggested deficiencies in planning, heightened jealousy, aggression, and impulsive behaviours that reflect childish actions and a disregard for consequences (Alkhamsan & Husin, 2023). Based on these traits, it indicates that the respondent is indifferent, does not know how to plan, and he is willing to do childish actions without thinking of the consequences.

In another case, the handwriting of an 18 years old respondent detained for homosexuality was also examined. The analysis revealed both general personality indicators and features consistent with "hell traits." Wide margins across most lines were interpreted as signs of excessive affection. At the same time, the appearance of hooks within letter formations and unstable letter shapes was associated with sensitivity to criticism and a propensity for aggressive or volatile reactions. At the same time, flying dots in handwriting were a sign of a broad imagination as well as an aversion towards laws or norms. Teething letters written without teeth signified a need for visualisation, whereas a dot on letters written towards the beginning was a sign of excessive jealous tendencies. Writing letters without teeth on the front was a sign of

violent behaviour, supporting lettering in unison as a sign of indifference, as well as a lack of prudence. Furthermore, hooks written on the opposite side, where writing was taking place, were a sign of characteristics associated with female behaviour. The interpretation dwelt on characteristics that expressed hell tendencies in graphology. Several significant indicators were noted in the respondent's handwriting, including nervousness, over-sensitivity, intense jealousy, violent tendencies, and rebellion against authority. These traits individually and collectively indicated a personality that was superego-oriented, featuring over-displayed attention-seeking behavior and materialism.

In the subsequent subject, handwriting that belonged to an 18 years old convict serving a sentence for kidnapping showed some evidence of hell tendencies. Writing letters with small teeth was indicative of mockery and introversion, and writing letter stems inward in the letter body in a spoon-like manner was indicative of self-love. Round and tight circular letters with endings closed by letters showed tendencies toward secrecy and a tendency to hide under a false personality. Writing strokes on the terminal ends revealed emotional overexpression, and repeated circular letters with snapping strokes indicated a split personality. Additionally, abruptly outlined horizontal letters were attributed to an impatient temperament, generous margins to an apprehension about the future, and tight margins to an excessive attachment to the past. The discussion highlighted characteristics categorized as hell characteristics in graphology, where the handwriting provided evidence towards self-love, irritability, nervousness, jealousy, fear of being criticized, and violent behavior towards others. It shows the existence of contradictory personalities, clinging to the past, and fear of the future as well as fear of criticism. A respondent with such type of personality is easy to provoke and thus his reaction is unexpected.

The researchers analysed the handwriting sample of a respondent who was detained in the remand facility for threatening the police and showed some connotations that revealed hell traits in his handwriting, which includes the connotation of the presence of a dot at the beginning of the letter indicating the trait of excessive jealousy. The connotation of writing the letters diagonally on both sides and unstable indicates the trait of dual personality. At the same time, handwriting featuring teeth-like lines was associated with an auditory-oriented acting system. Triangular peaks at the letter heads indicated dominance tendencies and the aspiration to project oneself upon others. Letters featuring widened lower parts were often perceived as indicating impatience as well as narrow-mindedness. Letter inclinations that were unstable pointed to mood swings. Spherical formations affixed to the letter stated signs of insincerity, and placing stems within the letter body was an indication of nervous reactions as well as deadly responses. Vertical lines packing blank loops indicated confusion of mind as well as lack of self-confidence. The outcomes probed the connotations, emphasising hell characteristics under graphology, and noted that these characteristics appeared in the handwriting of the respondent. Analysis indicated an opposing personality defined by aggressiveness, insincerity, nervousness, non-tolerance, and quick irritability. Those individuals tend to become easily annoyed, respond alarmingly unpredictably, and offend without hesitation when placed under favourable circumstances (Kowal & Gupta, 2021).

Handwriting of an 18 years old detainee charged with stabbing someone with a weapon was examined, and some graphological signs typical of "hell traits" were revealed. Dots given to letters from the start were explained as a sign of undue jealousy, and long or

“flying” strokes indicated fear of reproach. Round forms given to letters from the start were connected to consideration lessness and objection to rules and regulations, and letter terminations going into previous signs indicated undue curiosity and a habit of intruding into others’ business. Constancy of letter sizes indicated listlessness and a lack of foresight. Other characteristics included the presence of “toothed” letter types that signalled dependence on an oral reply to system, rotational writing movements that implied untruthfulness, and letters containing open-air loops that mirrored a lack of clarity and loss of self-confidence. Individually and collectively, these characteristics revealed a personality characterised by jealousy, fear of criticism, poor obedience to authority, hypersensitivity to criticism, modest self-confidence, and intrusiveness about others. Analysis, therefore, emphasised an incidence of combined “hell traits” in the respondent’s writing that pointed to a tendency to behave recklessly and to offend when opportunities present.

Handwriting of an 18 years old respondent who was arrested on a charge of kidnapping was analysed, and several signs were revealed correlating to “hell traits.” A small formation of circle letters was matched to a penchant to keep information to oneself, while imperfect or changeable letter formation corresponded to a penchant to create conflict. Overlaid circle strokes correlated with untruthfulness and corresponded to a likelihood of lying. Aggressive letter formation signalled an authoritative personality set on dominating others. Also recorded were unduly expanded line spacings as a sign of self-centredness and unduly large handwritten letters as a sign of concreteness and a focus on material objects. Pressure of the hand on the pen as a sign of anxiousness and uneven margins all across the sheet as an indication of internal conflict. A correct tilt of approximately 50–65 degrees is a sign of balance and aggressiveness. Finally, a shift in writing style is an indication of an unstable character and contradictory tendencies. The researchers focus on the connotation that refers to hell traits contained in graphology. The presence of those traits was noticed in the handwriting of respondents, which indicates the existence of dominating personality characterised by aggressiveness, tyranny, lying, and violent reactions (Alkhamsan & Husin, 2023).

Handwriting of an 18 years old detainee, now incarcerated in a remand centre on charges of kidnapping, was analyzed, and some of the signs characteristic of “hell traits” were present. Frustration was identified when letter formation tilted downward, and impulsive anger appeared when sharp terminations downward were noted. Triangular letters decorated with additions pointed to jealousy of equals. Other signs included letters of large size that were semioverted from the bottom, which indicated a weakness of character, and an oblique direction of writing that marked dependency. The variable pressure of the pen signified mirroring of family instability, and the progressive downward slope of the lines of writing served as an index of depressive trends. Irregular pen pressure was seen as an indicator of tendencies towards deviancy, and circular formations of letter signs indicated non-conformity with set norms and laws. Researchers dwelled on the characteristics of hell traits in handwriting and saw their manifestation in the present case. Such traits included a quick temperament, jealousy concerning the peer set, as well as non-compliance with established laws and norms. It also showed in the analysis that the respondent had a dependent personality who was manipulated and controlled by others. His history was evidenced by the influence of being polygamous and an unstable family background. In the interview, he confessed that he had followed his friend's orders without hesitation, and they both then proceeded to commit the crime.

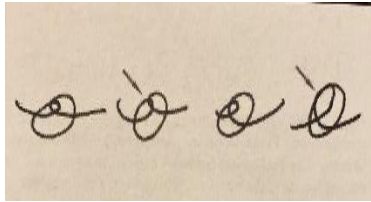
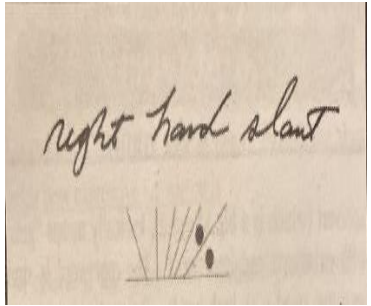
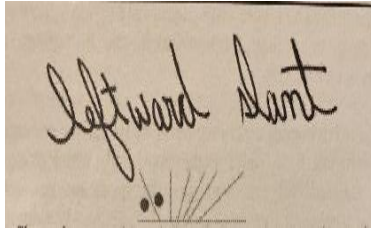
Another document belonged to an 18 years old detainee who spent time in a remand prison cell due to drug-related charges. Several signs typical of “hell traits” were found in his handwriting. Dots near the start of letters indicated a tendency to undue jealousy. Equal letter size pointed to indifference. Acute formation within the mid-zone of letters indicated nervous character and aggressiveness. Other observations were of letter formation that took a three-like shape to denote submission and vulnerability to external control. Round letter shapes pointed to dishonorability, and tooth-like letter forms to dependence on ear activity. Long “flying” letter strokes signified extreme sensibleness to reproach. Generally, the analysis revealed the presence of several “hell traits” signs in the respondent’s handwriting of the respondent such as the traits of excessive jealousy, nervousness, violence, and lying. It is clear that the respondent relies on receiving information from others or depends on others in making a decision, as he is not an independent person. He committed a crime based on instruction from others who promised to help him to improve the economic level of the family.

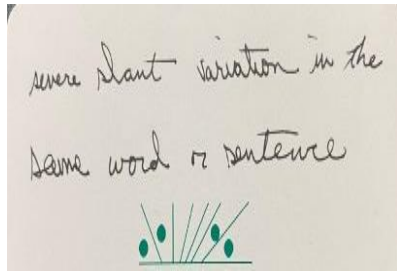
Analysis of another subject’s writing found that he was already in a remand centre as a result of disobedience to his parents, and several signs of “hell traits” were present. Variable pressure of the pen along the paper line indicated a sign of lack of balance, whereas narrow margins on either side indicated phobic attitudes. A large writing size indicated a big imagination, but also an inability to accept criticism. Dots appearing at letter starts indicated oversensitivity to jealousy, whereas toothed forms of letters indicated dependence upon an auditory feedback system. Other characteristics included an even letter size, implying indifference and a lack of foresight, and a proper pressure of the writing instrument, which suggested a residual impact of negative past experiences. Asymmetrical and irregular pressure of the writing instrument also suggested emotional instability and psychological distress. These traits, as a whole, indicate a type of character marked by undue jealousy, active imagination, unstable emotions, and a tendency towards self-centred action. However, it has been noted that the inmate has a dependent personality, and he depends on the auditory acting system, which relies on others in making decisions and analysing situations. The researchers also observed that the respondent comes from a broken family, hence the lack of home training enables him to engage in crime.

Another case was that of the handwriting of an 18 years old respondent being held in remand centre custody for a charge of sodomy. The graphology showed various characteristic “hell traits.” Lack of balance in writing was taken to signify ambiguity, and letters runningside by side were taken to indicate dominance. Strokes protruding outside letter bodies were taken to signify selfish motives and egocentrism, while partial protrusion outside the letter body itself showed perfectionist attitudes. End-writing of letters was taken to signify distrust, and stretched right-hand margins were taken to denote poor control over oneself. The other traits included uneven left-hand margins, which were symptoms of mood swings and emotional recklessness; emphatic letters within the centre zone, which were indicative of nervousness; and crossing shapes of letters, which were signs of stubbornness. The presence of initial dots on letters was also proven to be a symptom of jealousy. Overall, these features reflected a personality defined by jealousy, obstinacy, heightened nervousness, impulsive emotional tendencies, and weak self-regulation. The respondent comes from polygamous family background and lost his father so feels a state of emotional neglect. He was in a state of confusion that led to loss of confidence, lack of self-control, and reckless mood which made him commit crime.

Table 1 presents the relationship between “hell traits” and their corresponding graphological indicators. Table 1 summarises the connotations of such traits, together with descriptions, semantic meanings, and relevant handwriting characteristics. Connotations identify strokes, loops, inclines, letter size, length, hookness, and writing areas. Graphological characteristics defer to semantic meanings that indicate the innate feelings and moods of the individual, as well as behavioural dispositions that incline the respondent to commit a crime, particularly under propitiating conditions.

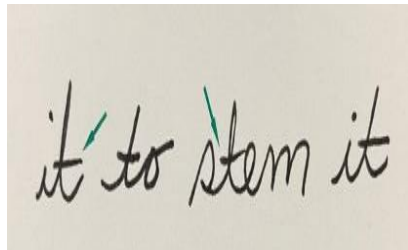
Table 1: Graphology and Handwriting Connotations Linked to “Hell Traits”

“Hell Traits” Connotation	Descriptions	Semantics	Graphology Traits Connotation
	<p>This is evident by the occurrence of loops on the left and right of downstroke a and o. Inner loops that cross over each other indicate a person who shuns utter honesty. Additionally, the bigger the loops, the bigger the deception tendency.</p>	<p>The person cannot be completely trusted.</p>	<p>Liar</p>
	<p>A marked right incline of handwriting was taken to mean that the personality is emotionally motivated and impulsive. The higher the incline, the stronger the emotional response. Such a writer is usually sensitive to other people's feelings, shows a persistent need to be loved, and gives their feelings freely, making relationships with people relatively easy to achieve.</p>	<p>The person has a constant need for affection. Can relate to others easily.</p>	<p>Emotionally responsive</p>
	<p>This characteristic is evident by a left leaning of writing that is consistent, having upstrokes of over 90 degrees relative to the bottom line. Smaller writing size is another indicator of introversion. They are typically quiet, hardly ever express their feelings, and prefer to make rational rather than emotional decisions.</p>	<p>Rarely expresses feelings, and makes logical, unemotional decisions.</p>	<p>Emotionally Withdrawn person</p>



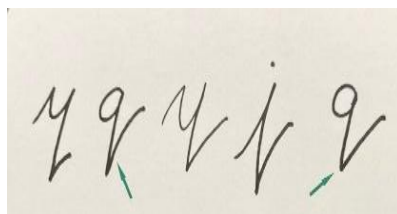
His characteristic is evident through characteristic shifts of tilt between left and right within the same line of writing. Such inconsistency tends to indicate trouble with making decisions, frequently through internal strife of feelings. The author tends to withdraw into introversion during feelings of insecurity and is subject to mood shifts that can be abrupt and unpredictable.

Unpredictable mood swings. Dual personality



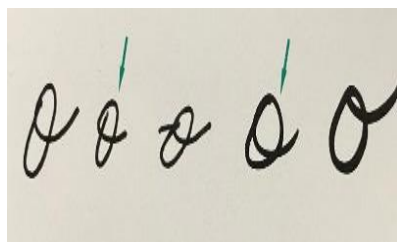
This personality emerges when the t-bar is very close to the bottom of the stem. It's connected with resistance to change and an apprehension of failing. Such people typically keep sticking to bad situations or bad relationships while, at the same time, ruminating about their own shortcomings. They hardly ever consider themselves to be lucky enough.

Absolute confidence on issues is always absent. Low self-esteem



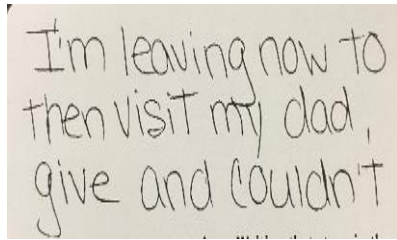
This characteristic is made recognizable by powerful right-hand upstrokes that replace the lower loop. It indicates an aggressive and pushy personality that tends to move to the future and its objectives. Such persons frequently need bodily escapes that will account for their aggressiveness, and these may manifest through sports or sometimes violent activity.

The person pushes into the future asserting himself physically. Aggressiveness



This characteristic is found in circular letters with extra loops on the right-hand. The inner loop size is deciphered as an indicator of secrecy an increase of the loop size indicates that the subject will hide information the more size the loop has. Very large loops indicate avoidance of giving full or direct responses.

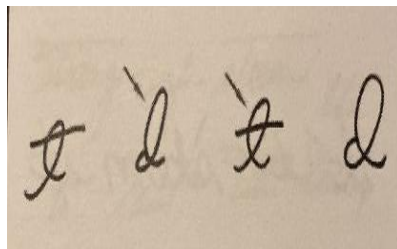
Always very unreliable when responding to questions asked. Secretive



This handwriting style is indicated by the absence of strokes into the upper area, with writing that takes place solely within the mid-zone. Such people will be fun-loving individuals but will face problems owing to an orientation with short-term gain and lack of thought about future repercussions. Such people's sense of values and morals will keep on changing continuously and will represent a sort of lack of maturity.

Have very limited thoughts about the future and care less about consequences

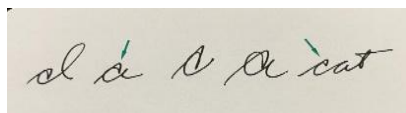
Lives for the moment



The characteristic of having stinger-like hooks within the letters of the middle zone, i.e., c, d, or a, is this mark. It is connected with feelings of underlying resentment against dominant figures of the other sex and desire to have a challenge mate. But with a feeling of being totally in control developing within the relationship, the individual becomes disinterested and detached.

A person has anger against the opposite sex. Becomes totally bored when in control of a relationship.

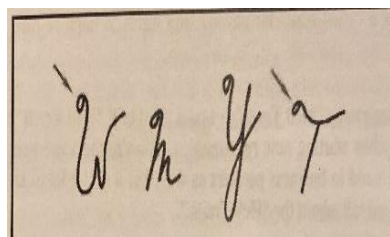
Issues with the opposite sex



This feature is identified when the stem of a lowercase d or t is written with an exaggerated loop.

The bigger the loop, the more painful to criticism one becomes.

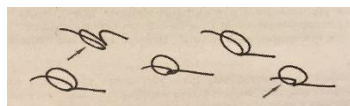
Sensitive to criticisms



This handwriting feature appears as a tightly formed initial loop that is small, nearly square in shape, and fully closed. It is associated with a fear of losing the affection of others. Writers with this trait may display possessiveness and competitiveness, with jealousy intensifying when combined with additional insecurities or fears.

Possessive and competitive.

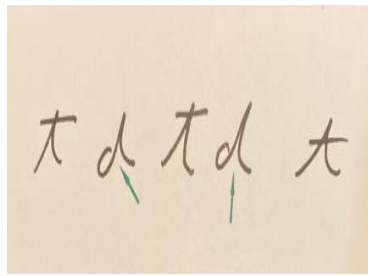
Jealousy



This feature is observed when circle letters contain inner loops positioned on the left side.

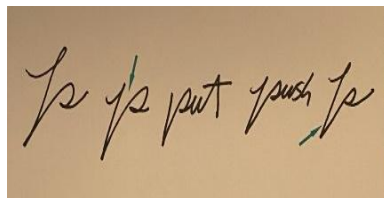
Deliberate refusal to face the reality of life.

Self-Deceit



This handwriting characteristic is diagnosed when t and d stems are written in the tepee or reversed position of the letter V. The tighter the letter brace, the better the individual is ready to stand up against personal opinions. Such writers tend to be stubborn, characterized by refusal to review their ideas or yield to opposing proof after their minds make up their decision.

The individual demonstrates a strong fear of making mistakes and Stubbornness shows resistance to altering decisions once they have been made.



This characteristic is manifest by developing a break-away P with a higher initial stroke. It is characteristically secondary to argumentativeness. The strength of this quality might be increased by its conjunction with other traits of analytical thinking, petulance, sarcasm, obstinacy, or imipaths.

This person is violent. Argumentative

5. Conclusion

The results of the current research verified the existence of the so-called “hell traits” in the handwriting of young convicts kept at the remand centre. It was concluded that the handwriting of each participant contained at least two or several indices of the aforementioned traits, implying information about emotions as well as behaviour, and being especially effective for the early identification of criminal tendencies (Seifer, 2008).

Ethics Approval and Consent to Participate

The authors adhered to the ethical guidelines adopted by the Research Ethics Committee of the Universiti Sains Malaysia (USM) (Approval Number USM/JEPeM/21110758). All procedures that took place among human participants were according to the ethical guidelines of the research institution's research board and the Declaration of Helsinki of 1964 and its later revisions. Informed consent was taken from all participants before data extraction.

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Conflict of Interest

The authors declare that they have no conflicts of interest regarding this paper and that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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