

Is There a Positive Association between a Leader's DiSC Style and DSM-5 Personality
Disorders: A Comparison with the Interpersonal Circumplex Model

Peter Agnew

Australian College of Applied Psychology

Abstract

This research will assist coaching and counsellor practitioners to understand personality style and its links to elements of personality disorders, and will allow them to explore the early use of evidenced-based behavioural intervention strategies without the use of complex diagnostic tools. Previous research has indicated that seven of the 10 personality disorders included within the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association [APA], 2013) are linked to dimensions of the Interpersonal Circumplex (IPC). The IPC has substantial overlap with a common workplace personality tool, called the DiSC Profile (Scullard & Baum, 2015). This quantitative study explored the relationship of a leaders DiSC style and DSM-5 personality disorders while undertaking a comparison to the Interpersonal Circumplex model. The study consisted of 83 participants who had previously undertaken a DiSC profile were asked to complete an online survey consisting of questions from the Personality Diagnostic Questionnaire (PDQ-4). A Rank Bi-serial correlation coefficient was used to indicate the direction of the relationship between personality style (PS) and personality disorder (PD). The results generally support the hypothesis that there is an association between a leaders' DiSC style and DSM-5 personality disorders listed in the same region as the IPC model. The findings also show associations with several other personality disorders (PD) with certain personality styles (PS) while also identifying those PD's with negative associations. These results indicate that coaches and counsellors have the potential to use the less intrusive DiSC profile for early behavioural development discussions while pointing to areas of more stringent testing if necessary. Further research could explore the use of DiSC subscales and the intensity of style measurement across the DiSC model.

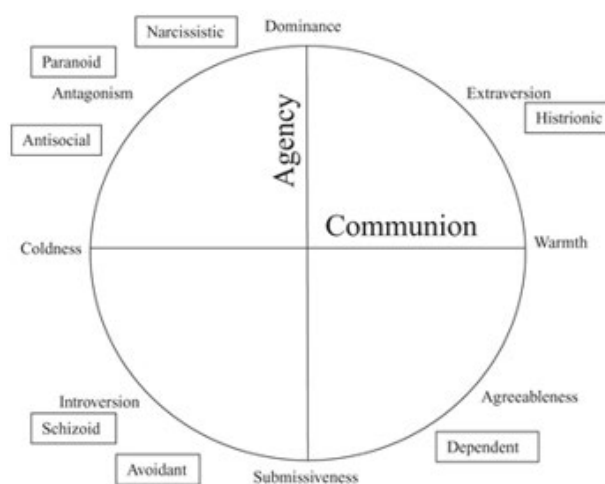
Keywords: Personality style; behavioural style, DiSC profile, personality disorders, interpersonal circumplex, leader behaviour

Is there a positive association between a leader's DiSC style and DSM-5 personality disorders: A comparison with the Interpersonal Circumplex model.

Personality and behaviour are key areas of ongoing exploration for coaches and practitioners attempting to find effective methods of behavioural change strategies for leaders within the workplace and to support them with interpersonal functioning with those they lead. Personality style questionnaires are commonplace but often do not provide links with greater evidenced based psychological research and intervention ideas. The purpose of this study is to determine if a common workplace personality style diagnostic tool (a DiSC profile) has a significant correlation with personality disorders as described in a similar model known as the Interpersonal Circumplex (IPC).

Figure 1

The Interpersonal Circumplex and DSM-5 Personality Disorders

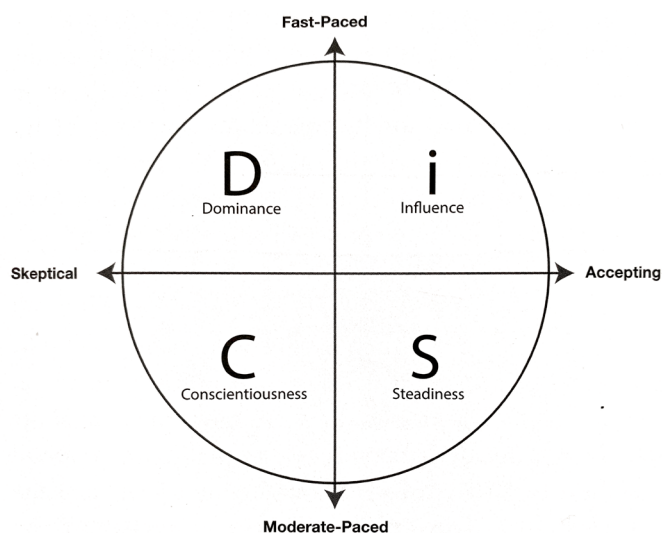


The IPC is a two-dimensional model of power and affiliation that has been used to explain most of the personality interaction patterns observed by researchers such as Leary (1957), Wiggins (2010) and Benjamin (1996). DiSC is also a two-dimensional personality style

model. It is administered to support an individual's understanding of his or her workplace related behaviours (Scullard & Baum, 2015). While the DiSC profile is a measure of "normal behaviour" and personality (Scullard & Baum, 2015), there is strong evidence that personality style can also indicate key elements and links to certain elements of personality disfunction when behaviour is rigid and inflexible (Kramer & Levy, 2016; Yalom & Leszcz, 2005; Hopewood, 2010; Robbins, 2001; Widiger & Hagemoser, 1997).

Figure 2

DiSC Profile Circumplex



DiSC (referred to by its product name 'Everything DiSC' by the publisher Wiley) (Figure 2) has similar dimensions to the IPC but has not been tested against the range of DSM-5 personality disorders. While not wanting to prove that a leader's DiSC style equates to a disorder or to disfunction, the research will assist coaches and counsellors with early conversations, development ideas and behavioural interventions, where necessary. The research question for this project is: 'Is there a positive association between a leaders DiSC style and DSM-5 personality disorders: A comparison with the Interpersonal Circumplex model'. This question lends itself to a post-positivism paradigm and quantitative methods of

research. It was hypothesised that Dominance (D style in DiSC) has a significant positive correlation to narcissistic, paranoid and antisocial personality disorders, and that Influencing (I style in DiSC) has a significant positive correlation with histrionic personality disorder. Steadiness (S style in DiSC) has a significant positive correlation with dependent personality disorder; and Conscientiousness (C style in DiSC) has a significant positive correlation with schizoid and avoidant personality disorders.

Literature Review

There is a large array of literature on personality, its measurement and intervention strategies to assist with therapy and personal development (APA, 2010; Cox et al., 2014). The American Psychological Association defines personality as “individual differences in characteristic patterns of thinking, feeling and behaving” (APA, 2013). Robbins (2001) described personality as “the sum total of ways in which an individual reacts and interacts with others” (p.212). The term ‘personality’ can be defined in many ways however, most definitions generally focus on one’s behaviour and the psychological interactions with the environment (Chan, 1996; Robbins, 2001; Widiger & Hagemoser, 1997) and note that these human characteristics do not quickly vary and are more likely to remain consistent throughout one’s life (Cheng, 2011).

When behaviour becomes problematic, it can be described as maladaptive or in more extreme, cases a disorder. Maladaptive personality is “not adjusting adequately or appropriately to the environment or situation” (Noren et al., 2007, p.263). According to Ward (2004) inadequate, or faulty adaptation. Critchfield et al (2010) indicate maladaptive behaviour “contains hostility, extremes of enmeshment (controlling or submitting to others), and/or extremes of differentiation (extreme separation, disconnection) in normal social settings” (p.481). The term ‘disorder’ has also been examined. Noren et al. (2007) defines

personality disorders as “enduring, pervasive, inflexible, maladaptive, and cause significant subject distress or impairment in social, occupational, or other important areas of functioning” (p.260). Kramer & Levy (2016) and Hopewood (2010) suggest that personality disorders, to some extent, reflect a rigid interpersonal behaviour. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) published by the American Psychiatric Association is a diagnostic tool and serves as one of the main principal authorities for industry professionals (Banerjee & Huband, 2009). The DSM-5 defines 10 personality disorders across three clusters (Appendix A). The second well recognised publication that provides definition to personality disorders is the International Statistical Classification of Diseases and Related Health Problems 10th Revision - ICD-10, which also has a classification index of disorders.

The DSM–5 classifies personality disorders with lists of seven to nine symptoms that are characteristic of an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of an individual’s culture (APA, 2013). Many of these characteristics are measured in various models and diagnostic tools that allow the practitioner to make a diagnosis of such disorders (Banerjee & Huband, 2009). The classification of personality disorders is not without controversy and the literature reviewed highlights the growing interest in separating the assessment of personality disorders from the assessment of dysfunction (Fernandez-Alvarez et al, 2013; Clarkin et al., 2016; Widiger, 2010).

There is also a clear distinction in many of the papers reviewed that the prevalence of disorder characteristics may not indicate a defined disorder (Chan, 1996; Frances, 2013; Fernandez-Alvarez et al., 2013). Allen Frances (2013) a key author of DSM III and IV and author of ‘Saving Normal’ notes that so many of these behavioural traits in the DSM occur in perfectly normal people and that people should not be labelled with a disorder after meeting the various DSM criteria. He suggests that “having symptoms themselves does not constitute

a disorder. Crucial to the diagnoses is the requirement that the behaviours cause clinically significant distress or impairment”. He cites that US President Donald Trump meets each of the criteria for narcissistic personality disorder but would not be diagnosed as having the disorder as his personality does not affect his ability to carry out day to day functioning in the environment that he is currently in. In many cases, his behaviour has been rewarded, admired by some, and has allowed him to reach high office. Although there are many divergent views on using criteria selection to define disorders, there has been an increased consensus to follow the two key publications; the ICD 10 and the DSM-5 (Kramer, 2016; Banerjee et al., 2009).

The measurement of personality, disorders and behaviour can be undertaken in a variety of ways. There are 17 structured personality disorder assessment instruments that comprise the main tools within industry according to Banerjee et al., (2009). These instruments range from observer rated, self-rated and interview-based assessment. Common observer rated instruments according to Banerjee et al., (2009) are the International Personality Disorder Examination (Loranger et al., 1994) and the Diagnostic Interview (Zanarini & Frankenburg, 1996). Examples of self-rated inventories include the Personality Diagnostic Questionnaire (PDQ-4) (Hyer, 1994), the Personality Assessment Inventory (Morey, 1991) the Sixteen Personality Factor Questionnaire (16PF) (Cattell & Mead, 1993) and the Minnesota Multiphasic Personality Inventory-II (Butcher, 1989) to name a few.

Many of these models describe trait hierarchically and ask a battery of questions to categorise or measure. An example of such hierarchically model would be the five-factor personality model, measuring “The big five” also known as the FFM (Widiger, 2010). The model defines five broad dimensions of personality that include; Conscientiousness, Agreeableness, Openness, Extraversion and Neuroticism while measuring 30 lower order traits or facets. Many of the research papers reviewed (Banerjee, 2009; Noren et al., 2007;

Widiger, 2010; Douglas, 2008) indicate compelling support that maladaptive or extreme variants of the domains of the FFM indicate elements of the various DSM personality disorders. The revised NEO Personality Inventory (NEO PI-R and the NEO PI-3) is also a key inventory that examines the “facets” of the Big Five Personality traits and reports on six subcategories of each of the FFM traits (McCrae et al., 2005). A similar model to the FFM was developed by Timothy Leary (1957) and titled ‘The Interpersonal Circumplex’ (Figure 1). Much of the material reviewed refers to the circumplex and its reference and link to the various personality disorders. Benjamin (1996) argues that it is one of the main frameworks that provides a clear overview of dimensional nature of personality and its link to the DSM-5 for seven of the listed personality disorders. Widiger (2010) indicates that the predominant dimensional model of personality and personality disorder is arguably the FFM but notes that the IPC is “fairly straightforward” and that many of the dimensions rotate around the model (p. 528). Hopewood (2010) also suggests that the IPC and the FFM are not competitive models but rather “complementary and interactive” (p.528). From the literature reviewed, the circumplex nature of the IPC links well with the popular and commonly used and validated FFM. The focus of this research has also used a circumplex model, the DiSC profile. While the language used in DiSC is less harsh in nature, it has strong links and complementary descriptive wording to the dimensions of the IPC. The tools also have a range of supporting documentation which unpacks many behavioural traits that support healthy workplace behaviour while creating self-awareness of some of the unhealthy traits. A description of the characteristics of each dimension of the DiSC profile is in Appendix B.

A key concern often faced in industry is the accuracy of any profiling tool (Cox et al., 2008). While popular in industry and the workplace, DiSC is often described in clinical terms as more of a “pop psychology” instrument and therefore not suitable for clinical or more advanced therapeutic settings. In many ways, what is being questioned is the evidence-based

validity and reliability of the profile. Validity refers to whether or not a test actually measures the construct that it is intended to measure while reliability refers to the degree in which a test produces stable and consistent results (Scullard & Baum, 2015). The Wiley Research Report (Scullard & Baum, 2015) indicates strong support for the reliability and validity of the ‘Everything DiSC’ assessment (Scullard & Baum, 2015). Analyses suggest that the scales’ reliabilities are in the good-to-excellent range, with a median coefficient alpha of .87 and a median test-retest reliability of .86 (Scullard & Baum, 2015). The research report provides sound evidence for the circumplex measurement as assessed by multidimensional scaling, scale intercorrelations, and factor analysis. The Wiley DiSC model has also had a correlation analysis undertaken between the NEO-PI-R and the 16PF instruments discussed above. It notes that “the correlation between the ‘Everything DiSC’ scales and the scales of the NEO-PI-R and the 16PF provide additional support for the validity of the assessment (Scullard & Baum, 2015). Such close links to other industry accepted tools and the high levels of validity naturally provide good support for further research in this area to be conducted and for the exploration of this research question.

The DiSC Profile is not a recognised structural measurement of personality dysfunction and largely focuses on the developmental nature of style using a positive narrative and a tone that eliminates feedback that might be psychologically sensitive or threatening in nature (Scullard & Baum, 2015). The DiSC model has also not been tested against the listed DSM-5 personality disorder criteria. A key focus for this research has been to determine if this tool (a DiSC profile) can also provide indications of maladaptive or elements of certain personality disorders, knowing that the correlations exist between the DiSC profile and other popular categorised tools for the measurement of personality such as the FFM and the IPC (Widiger, 2010; Scullard & Baum, 2015). The DiSC profile presents as a two-dimensional model and has associated characterises to the IPC model described above.

The IPC has similar vertical and horizontal characteristics (Agency and Communion) and links personality disorders to the outside circumplex of the model. It is therefore hypothesised that the Dominance (D style in DiSC) has a significant positive correlation to narcissistic, paranoid and antisocial personality disorders. Influencing (I style in DiSC) has a significant positive correlation with histrionic personality disorder. Steadiness (S style in DiSC) has a significant positive correlation with dependent personality disorder; and Conscientiousness (C style in DiSC) has a significant positive correlation with schizoid and avoidant personality disorders. The research question to test this hypothesis is: Is there a positive association between a leader's DiSC style and DSM-5 personality disorders: A comparison with the Interpersonal Circumplex model

Method

Design

The design of this research has used a post-positivism paradigm and quantitative methods of research. A comparison analysis is used to determine if there is a link between a leader's DiSC profile style and personality traits listed in the DSM-5 criteria for a particular personality disorder using the Personality Diagnostic Questionnaire (PDQ-4). The study has relied on statistical data to support the hypothesis that there is a link between personality styles and personality disorder classifications.

Participants

Participants were recruited from existing DiSC profile participants through promotion in a leadership newsletter, on LinkedIn and via the use of social media. The inclusion criteria for those participating included that they had previously completed a DiSC profile, were aware of their DiSC style and were aged 18 years or older. It was noted that participants may have had a relationship with the researcher as a trainer/facilitator of the DiSC program and measures were put in place to ensure anonymity and confidentiality as part of the ethics

application. Other than DiSC style no other personal identification data was collected.

Eighty-three participants completed the survey across the four DiSC styles.

Materials

Data for this research was collected via an online ‘survey monkey’ platform where participants are asked two questions about their DiSC style location and their style intensity. A further 98 True/False questions from the Personality Diagnostic Questionnaire (PDQ-4) were asked.

Personality Disorder Questionnaire. The Personality Diagnostic Questionnaire (PDQ-4) was main instrument used to obtain data on elements of personality disorder. Developed by Steven E. Hyler, M.D. of the New York State Psychiatric Institute, the questionnaire includes 98 true and false questions and are clustered using a scoring sheet into each of the 10 personality disorders. Participants, according to the PDQ-4 instruction guidelines, are given 98 descriptions of abnormal behaviours (e.g. “I am often on guard of being taken advantage of”). They are asked to indicate whether each description is “generally true” or “generally false” of them. Questions are categorised using the PDQ-4 scoring sheet in clusters aligned with the 10 personality disorders (e.g. questions 11, 24, 37, 50, 62, 85, 96 all relate to paranoid personality disorder). If a participant indicates a significant number of abnormal behaviours across a cluster, an indication of personality disorder is provided to the clinician. The scoring sheet does not provide a diagnosis of personality disorders but allows for questions to be asked in a clinical interview following the assessment to provide such diagnosis.

DiSC Style. DiSC is the name of a common workplace profile tool that provides an indication of a person’s personality style. The foundation of DiSC was first described by William Moulton Marston in his 1928 book, ‘Emotions of Normal People’. Marston identified what he called four primary emotions and associated behavioural responses. These

primary emotions are defined today with four styles known as Dominance (D), Influence (i), Steadiness (S), and Conscientiousness (C). Substyles are contained within each of the styles and because of this, the Wiley 'Everything DiSC' assessment model proposes that the eight scales are arranged as a circumplex (Appendix C). Participants are presented with a series of statements and asked to indicate the degree to which they agree or disagree with that statement using a 5-point Likert scale. Statements includes items such as "I want things to be exact" or "I am bold". Adaptive testing is used as part of the online survey that generally takes 15-20 minutes to complete (Scullard & Baum, 2015). Participants in this research will have undertaken a DiSC profile assessment prior to participating in the research questionnaire. The output of a DiSC profile is represented by a dot on the DiSC circumplex indicating a leader's style and intensity. A dot on the outside edge of the circumplex will indicate a strong style intensity; towards the middle of the style, a moderate intensity; and toward the centre of the circumplex, a slight intensity. Style may also be broken down into a primary style (such as D) or a primary style and a substyle (CD) if the dot location is near the edge of another style. Appendix C indicates the four primary styles and the substyles.

Procedure

Prior to undertaking this research, ethical approval from the Human Research Ethics Committee at the Australian College of Applied Psychology was obtained. An online information page and informed consent process was initiated prior to participants undertaking an online survey. Data for this study has been collected via an online survey with invitation information included in the researcher's business newsletter. The survey was first promoted in July 2020 and closed in September 2020 with a total of 83 respondents. Data coding was undertaken to code each answer of the DiSC style and included the 12 substyles (iS = 1, D = 2, Si = 3, CD = 4, C = 5, iD = 6, Di = 7, SC = 8, DC = 9, I = 10, CS = 11, S = 12), and the intensity of style (1 = strong, 2 = moderate, 3 = slight and 4 = Don't know). The PDQ-4 true

and false questions were also coded (true =1, false =0). Finally, the PDQ survey questions were coded as per the marking sheet instructions (e.g. Paranoid equals questions 11, 24, 37, 50, 62, 85, 96). An analysis of the response data from each participant was undertaken using the scoring sheet criteria to indicate the prevalence of a personality disorder, A clinician would then use this scoring to undertake further questioning focused on that personality disorder. For the purpose of this analysis, the scored data was used and a Rank Biserial correlation coefficient analysis was undertaken to compare personality styles (PS) as a binary variable and personality disorders (PD) as the ordinal variable. Due to the limited numbers within each DiSC subscale, data was restructured based on the four primary DiSC styles (D= D, Di, DC; I = I, iD, iS; S = S, Si, SC; C = C, CS, CD). Non identical data was stored on a password protected computer and will be transferred to a memory stick to be stored securely at ACAP following this research.

Results

Screening and Cleaning of Data

Data collected for this research used true/false questions. The data was then restructured to score personality disorder data across the scoring scale of the PDQ-4. There were only 22 missing true/false responses across all data collected and all data was thus considered valid with no response missing greater than 10% of data collected (Jackson, 2017). As the data is nominal data with true/false responses, there are no outliers recorded across the data field. A normality test was not undertaken as the data is categorical.

Descriptive Statistics

A total of 83 participants answered the research survey. Data was analysed against each of the 12 DiSC substyles. The D style had the most responses (n=11) while the iS style the lowest (n=2). With small numbers of responses in many of the substyles, data was restructured to be analysed across the four primary styles as indicated in table 1.

Table 1*Responses per DiSC Style. N=83*

DiSC Style	Number Respondents	Response %
Dominance (D style)	22	26.5%
Influencing (I style)	16	19.3%
Steadiness (S style)	28	33.7%
Conscientiousness (C style)	17	20.5%

Table 2 indicates the frequency of responses for each personality disorder within the PDQ-4 survey. The obsessive-compulsive disorder had the highest response 'true' rate (n = 214) across the eight descriptions of abnormal behaviour. Antisocial (n = 52) the lowest scoring. A total of 1568 responses indicating 'true' were recorded representing on average 5.2 'true' questions per participant.

Table 2*Frequency of Responses for each PDQ-4 Personality Disorder Statements*

Personality Disorder	Frequency of True responses in PDQ-4
Antisocial	52
Avoidant	159
Borderline	101
Dependent	87
Depressive	127
Histrionic	121
Narcissistic	155
Negativistic	84
Obsessive Comp	214

Paranoid	159
Schizoid	121
Schizotypal	206
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Total PDQ-4 'true' responses	1568
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Rank Biserial Correlation Coefficient

To test the relationship between personality style (PS) and personality disorder (PD), a Rank Biserial Correlation Coefficient analysis was performed using SPSS (version 23). This test is used for categorical data to determine a correlation between the nominal and ordinal data. This data provides the direction of the associations (Jackson, 2017). The Rank Biserial Correlation indicates the group membership of personality disorders.

Table 3

Rank Biserial Correlation Matrix displaying relationship values between Personality Style and Personality Disorder

DSM-5 Disorder	Dominance	Influence	Steadiness	Conscientiousness
Antisocial	0.43***	0.15	-0.37***	-0.18
Avoidant	-0.27**	-0.36***	0.07	0.58***
Borderline	0.21	-0.23	-0.24*	0.28*
Dependent	-0.27**	-0.38***	0.41***	0.14
Depressive	-0.1	-0.23	-0.05	0.39***
Histrionic	-0.09	0.35**	-0.17	-0.03
Narcissistic	0.03	0.04	-0.25*	0.26*
Negativistic	0.2	-0.08	-0.28**	0.2
Obsessive Comp	0.01	-0.12	-0.03	0.14
Paranoid	0.16	-0.28*	-0.23*	0.38***

Schizoid	0.03	-0.42***	-0.19	0.61***
Schizotypal	0.12	-0.34**	-0.05	0.25*

*Note: * = $p < 0.10$; ** = $p < 0.05$; *** = $p < 0.01$*

Table 4 provides a summary of the results with an indication of DiSC style, the hypothesised personality disorder, the disorders with significant positive correlation, and those with a significant negative correlation.

Table 4

Hypothesised Associations between DiSC Style and Personality Disorder and results from Rank Bi-Serial Correlation Coefficient

DiSC Style (PS)	Hypothesised Personality Disorder (PD) link to PS	Significant Positive Correlation	Significant Negative Correlation
D Style	Narcissistic Paranoid Antisocial	Antisocial	Avoidant Dependent
I Style	Histrionic	Histrionic	Avoidant Dependent Paranoid Schizoid Schizotypal
S Style	Dependent	Dependent	Antisocial Borderline Narcissistic Negativistic Paranoid
C Style	Schizoid Avoidant	Schizoid Avoidant Depressive Narcissistic Paranoid Schizotypal	

Borderline

Results for Hypothesis one, that Dominance (D style in DiSC) has a significant positive correlation to narcissistic, paranoid, and antisocial personality disorders, indicate a partial association; Antisocial has a significant and strong positive correlation, $r = 0.43, p < 0.01$ while narcissistic and paranoid do not have a significant association. The results also indicate a significant negative association with Avoidant, $r = -0.27, p < 0.05$ and Dependent, $r = -0.27, p < 0.05$. The results for Hypothesis two, that Influencing (I style in DiSC) has a significant positive correlation with histrionic personality disorder, is confirmed by the research data. Histrionic personality disorder has a significant association, $r = 0.35, p < 0.05$. Three personality disorders have significant and strong negative association (Avoidant, $r = -0.36, p < 0.01$; Dependent, $r = -0.38, p < 0.01$; and Schizoid, $r = -0.42, p < 0.01$). Two others have a significant (but not strong) negative association (Schizotypal, $r = -0.34, p < 0.05$, and Paranoid, $r = 0.28, p < 0.10$). Hypothesis three is also confirmed, in that Steadiness (S style in DiSC) has a significant positive correlation with dependent personality disorder, $r = 0.41, p < 0.01$. Finally, the fourth hypothesis, that the Conscientious (C style in DiSC) has a significant positive correlation with schizoid and avoidant personality disorders is also confirmed. The C style has a significant and strong relationship with Schizoid, $r = 0.61, p < 0.01$ and Avoidant, $r = 0.58, p < 0.01$. This style also has several other personality disorders associated with this DiSC style that have not been hypothesised. These include Depressive, $r = 0.39, p < 0.01$; Paranoid, $r = 0.38, p < 0.01$; Schizotypal, $r = 0.25, p < 0.10$; Narcissistic, $r = 0.26, p < 0.10$; and Borderline, $r = 0.28, p < 0.10$.

Discussion

This research was conducted to explore the relationship of a leader's DiSC style and DSM-5 personality disorders while undertaking a comparison to the Interpersonal

Circumplex model. The research question was; Is there a positive association between a leaders DiSC style and DSM-5 personality disorders: A comparison with the Interpersonal Circumplex model. This research has confirmed that there is a high significant correlation with five of the seven personality disorders displayed in the Interpersonal Circumplex and a weak positive correlation with the remaining two.

The first hypothesis focused on the Dominance style and is the only style that does not have a complete significant association with the IPC. It does have a significantly strong correlation with the antisocial personality disorder. The remaining two personality disorders, narcissistic and paranoid disorders have a weak positive correlation. This personality style can be “antagonistic mode of engagement” (Widiger, 2010) and a “forceful disposition” (Scullard & Baum, 2015) which link with antisocial traits. As this style has a more active and direct style, it could also explain why there is a significant negative correlation with dependent and avoidant disorders with more passive traits as listed in Appendix A.

Hypothesis two and three relate to the I style and the S style respectively. Both styles sit on the right-hand side of the DiSC model and it has been demonstrated through this research that they have a significant and strong association with the disorders identified in the IPC. The I style has a significant association with histrionic personality disorder and the S style with the dependent personality disorder. Both styles tend to have a more optimistic nature and have a greater “cheerful” disposition (Scullard & Baum, 2015). The descriptions provided by many of the key authors (Widiger, 2010; Scullard & Baum, 2015; Benjamin, 2016 & Hopewood, 2010) would explain many of the significant negative associations across these two styles. Antisocial, paranoid, negativistic are some of the personality disorders with a significant negative correlation, and can be identified by some of the opposing behaviours to ‘optimistic’ such as being more sceptical, negative, and assessing thinking and behaviour (APA, 2013).

The final hypothesis relates to the C style and the schizoid and avoidant personality disorders. Both disorders have a significant and strong correlation with the C style, as expected. Unexpected results include several other personality disorders that also have a significant positive correlation. These disorders include depressive, narcissistic, paranoid, schizotypal and borderline. The perfectionist nature of the C style along with being interpersonally restrained, sceptical and with a private persona (Scullard & Baum, 2015) provides many links with the characteristics of the DSM-5 disorder characteristics descriptions and, in more intense examples, point to maladaptive connections with others. As discussed within this report and noted by Yalom & Leszcz (2005) “people need people – for initial and continual survival, for socialisation, for the pursuit of satisfaction” The detachment from people as a tendency and in its extreme, may explain why this style exhibits a greater association to depressive and other disorders that define anti-social, skeptical and impersonal personality criteria.

Interpersonal relationships and an individual’s ‘mode of engagement’ figure prominently in most of the literature discussed and is strongly linked to suffering and growth according to many of the authors reviewed (Yalom & Leszcz, 2005; Hopewood, 2010; Robbins, 2001; Widiger & Hagemoser, 1997). There is predominately two widely used ways to categorise personality disorders, the DSM-5 and the ICD that result in such suffering (Kramer & Levy, 2016; Banerjee et al., 2009). While there is debate about using criteria to define personality disorders (Kramer & Levy, 2016; Banerjee et al. 2009), it has been widely accepted that rigid behaviour and interactions that are not able to adjust to the environment, or the situation, can become personally problematic and can lead to personal suffering (Yalom & Leszcz, 2005). A key outcome of defining any trait, style, disorder or behaviour for counsellors and other practitioners is to relieve such suffering caused by this maladaptive behaviour. The evidence in this research places the DiSC model in a good position to align

with more rigid tools within a clinical setting. The DiSC profile has been substantially developed and validated with other key psychological models over the last decade (Scullard & Baum, 2015) and today sees a user friendly, evidenced-based profiling tool that is widely accepted in workplaces around the world.

While the analysis in this report has been strong in its descriptions and definitive in its links with various personality disorders, the results do not mean that leaders with a particular DiSC style have the prescribed personality disorder. Caution should be exercised when discussing behavioural style with personality disorders, and direct associations should be avoided. Rather, practitioners should exercise curiosity about DiSC style tendencies with the view of linking appropriate behavioural and interpersonal interventions based on style and client narrative to reduce suffering from maladaptive interpersonal connection and interactions.

Arising from the research, there is also new evidence to explore personality disorders that have a negative correlation with DiSC personality styles and several other personality disorders that correlate with the Conscientiousness style. Further research on the many complex attributes of the C style has potential for a greater understanding of this style. Of consideration could be such topics of attachment style, greater prevalence of anxiety and depression, and the impact of interpersonal connection linked to this style. Additional research on the subscales and style intensity also has potential for a greater understanding of the DiSC profile and may demonstrate a greater link to the IPC model.

This study has had several limitations. A larger data pool would have allowed DiSC data to be analysed across the twelve DiSC substyles and for the intensity of the DiSC style to be analysed. It would be assumed that the more intense an individual DiSC style, a greater association with the IPC would be achieved. This research used the PDQ-4 personality disorder questionnaire. The questionnaire presents statements that are strongly worded and

many of the statements are quite intense. Greater exploration across the seventeen structured personality disorder assessment instruments (Banerjee, 2009) before selecting the PDQ-4 may have also added value to this research. Finally, the researcher has had a long history of personal use of DiSC. This would naturally see a bias favourable towards this model and evidence developed to support its validity. The database used to promote the research study is also attached to the researcher's workplace. While the ethics application provided risk strategies to protect privacy and confidentiality, survey promotion at a greater distance from the researcher would provide a level of objectivity and integrity for those reviewing this paper.

This research has provided good evidence that there is a link with a leader's DiSC style and attributes of DSM-5 personality disorders. It also indicates that this link is predominantly in the areas of a similar model, the Interpersonal Circumplex. While personality is complex, the research indicates that a DiSC profile may assist in breaking down this complexity while pointing to common maladaptive behaviours. It is hoped that such a 'softer' personality model will initiate early conversations about behaviour, to help unlock relevant theory around these behaviours and to assist in reducing suffering due to poor interpersonal connection, while enhancing interactions with others.

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Appendix A – DSM-5 Clusters and Personality Disorders

Cluster A: odd or eccentric behaviour

- Paranoid personality disorder: a pattern of distrust and suspiciousness where others' motives are seen as mean or spiteful. People with paranoid personality disorder often assume people will harm or deceive them and are reluctant to confide in others or become close to them.
- Schizoid personality disorder: a pattern of detachment from social relationships and a limited range of emotional expression. A person with schizoid personality disorder typically does not seek close relationships, chooses solitary activities and appears indifferent to praise or criticism from others.
- Schizotypal personality disorder: a pattern of acute discomfort in close relationships, distortions in thinking or perception, and eccentric behaviour. A person with schizotypal personality disorder may have odd beliefs or magical thinking, odd or peculiar behaviour or speech, or may incorrectly attribute meanings to events.

Cluster B: dramatic, emotional or erratic behaviour

- Antisocial personality disorder: a pattern of disregarding or violating the rights of others. A person with antisocial personality disorder may not conform to social norms, may repeatedly lie or deceive others, or may act impulsively.
- Borderline personality disorder: a pattern of instability in personal relationships, emotional response, self-image and impulsivity. A person with borderline personality disorder may go to great lengths to avoid abandonment (real or perceived), have recurrent suicidal behaviour, display inappropriate intense anger or have chronic feelings of emptiness.
- Histrionic personality disorder: a pattern of excessive emotion and attention seeking. A person with histrionic personality disorder may be uncomfortable when he/she is not the centre of attention, consistently use physical appearance to draw attention or show rapidly shifting or exaggerated emotions.
- Narcissistic personality disorder: a pattern of need for admiration and lack of empathy for others. A person with narcissistic personality disorder may have a grandiose sense of self-importance, a sense of entitlement, take advantage of others or lack empathy.

Cluster C: anxious or fearful behaviour

- Avoidant personality disorder: a pattern of social inhibition, feelings of inadequacy and extreme sensitivity to criticism. A person with avoidant personality disorder may be unwilling to get involved with people unless he/she is certain of being liked, be preoccupied with being criticized or rejected, or may view himself/herself as being inferior or socially inept.
- Dependent personality disorder: a pattern of needing to be taken care of and submissive and clingy behavior. A person with dependent personality disorder may have difficulty making daily decisions without reassurance from others or may feel uncomfortable or helpless when alone because of fear of inability to take care of himself or herself.
- Obsessive-compulsive personality disorder: a pattern of preoccupation with orderliness, perfectionism and control. A person with obsessive-compulsive

personality disorder may be preoccupied with details or schedules, may work excessively to the exclusion of leisure or friendships, or may be inflexible in morality and values. (This is NOT the same as obsessive compulsive disorder)

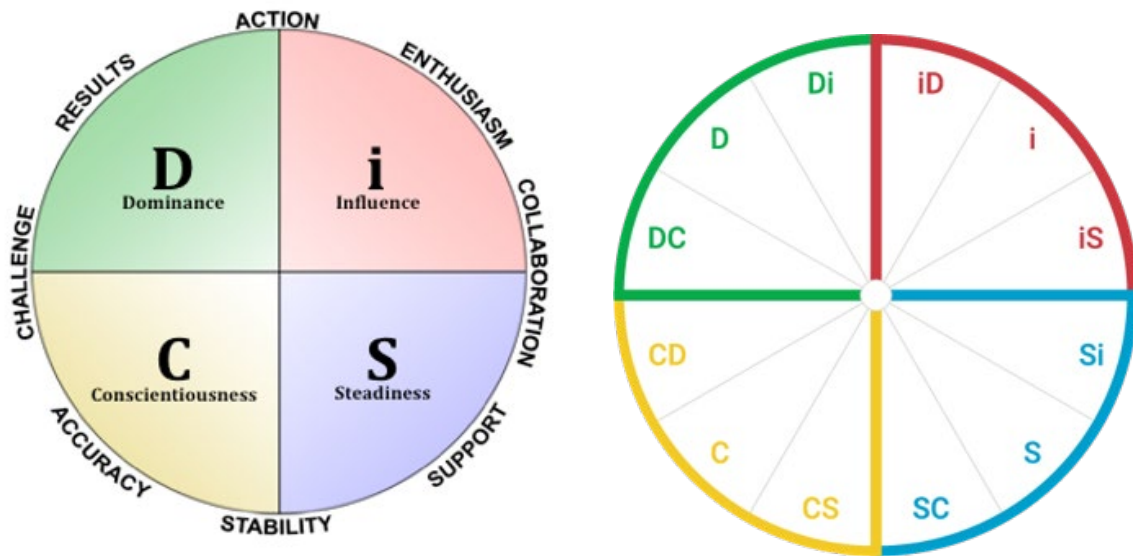
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Appendix B – DiSC Style Overview

DiSC Style	Description
Dominance	People in this style are often described as direct, result-oriented, firm, strong willed, and forceful. They are more likely to display aggressive and antagonistic behaviour and push vigorously for their opinions and using a more forceful disposition.
Influencing	This style generally describes people who both have high energy and are very interpersonally positive. Consequently, they are frequently described as enthusiastic, optimistic and high spirited.
Steadiness	Steadiness as an adjective represents gentle. People in this space are both interpersonally warm and have a lower level of outward energy. They tend to be optimistic, calm, peaceful, or even-tempered.
Conscientiousness	This style is one of being analytical. In this space people are more reserved and are more likely to keep to themselves. They can be both cautious and skeptical and may often come across as interpersonally restrained.

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Appendix C – The DiSC Model and the Twelve Subscales



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