

Theoretical Analyses

The Evolutionary Logic of the Obsessive Trait Complex: Obsessive Compulsive Personality Disorder as a Complementary Behavioral SyndromeSteven Charles Hertler*^a

[a] College of New Rochelle, New Rochelle, NY, USA.

Abstract

Freud noted that the obsessive traits of orderliness, parsimony, and obstinacy incontestably belonged together. This observation has been unflinchingly justified, but unsatisfactorily explained. Being a highly heritable pattern essentially unaffected by parental influence, it is counterfactual to continue to explain the obsessive trait constellation as a pathological signature of harsh, authoritarian parenting. Alternatively, the present paper, building upon a previously promulgated evolutionary etiological model, describes how obsessive traits work in unison to enable survival within harsh northerly climates. What appears to be a loosely federated inventory of pathology, after the application of evolutionary reasoning, becomes a coherent behavioral package, adaptive suite, or behavioral syndrome. All three of these terms, taken from behavioral biology, suggest that traits strategically covary, such that the adaptive value of each trait is enhanced by the presence of the others. In this vein, the union of anxious tension and conscientiousness drives the obsessive personality to labor incessantly. The fruits of obsessive labor are then conserved through parsimoniousness, hoarding, vigilance, and niggardliness. And so, obsessive personality is a coherent behavioral package in that the drive to work towards the acquisition of necessities is paired with the drive to conserve and defend them.

Keywords: behavioral syndrome, coherent behavioral package, evolution, obsessive-compulsive personality disorder, strategy, suite of adaptations

Psychological Thought, 2015, Vol. 8(1), 17–34, doi:10.5964/psyct.v8i1.125

Received: 2014-10-29. Accepted: 2015-01-12. Published (VoR): 2015-04-30.

Handling Editor: Stanislava Stoyanova, Department of Psychology, South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria

*Corresponding author at: College of New Rochelle, 29 Castle Ave., New Rochelle, NY, 10805, USA. E-mail: stevenhertler@hotmail.com



This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction**A Coherent and Enduring Pattern**

The obsessive character structure was first rigorously defined by Sigmund Freud as *Anal Character* and was thereafter labeled *Anankastic Personality* in ICD-9, *Compulsive Personality* in DSM-I, *Obsessive-Compulsive Personality* in DSM-II, *Compulsive Personality Disorder* in DSM-III and *Obsessive Compulsive Personality Disorder* in DSM-III-R and DSM-IV (Pfohl & Blum, 1991). Spanning not only nosologies, but generations, traditions and approximately one hundred years of social scientific progress, the obsessive personality has endured, suggesting that it is a coherent pattern whose constituent traits cohere within individuals (Pollak, 1987). In other words, the constellation of obsessive traits is able to weather change and time because it is real pattern. In his 1908 paper entitled *Character and Anal Eroticism*, Freud described the anal triad of *orderliness*, *parsimony* and *obstinacy*, ending his introductory description with the following reflection: “...it seems to me incontestable that all three [character traits] in some way belong together” (Freud, 1908/1959, p. 169; Gay, 1989). Freudian description,

written so many years ago, continues to be true. The essence of the anal triad comports with DSM-V's description of obsessive personality as "a pervasive pattern of preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency..." (McCann, 2009, p. 744).

Freud (1908/1959), Janet (Salzman, 1985) and Shapiro (2002) all described the obsessive as *conscientious*, and it would be through this trait that five-factor theorists would come to define obsessive character. It became known as a *disorder of excessive conscientiousness* (Samuel & Widiger, 2008; Widiger, Trull, Clarkin, Sanderson, & Costa, 2002). As previously described (Hertler, 2015a, p. 53):

Obsessive characterⁱ is strongly and positively related to the overarching construct of conscientiousness, as well as to each of its six facets: competence, order, dutifulness, achievement striving, self-discipline and deliberation (Furnham & Crump, 2005; Lynam & Widiger, 2001; Warner et al., 2004). Most recently, in their article entitled *Conscientiousness and Obsessive Compulsive Personality Disorder*, Samuel and Widiger (2011) found obsessive character to be strongly associated with all facets of conscientiousness across five of six trait-based assessments. Other classically defined obsessive features load on other factors. Obsessive character is associated with two facets of neuroticism: first, it is negatively correlated with impulsivity (Lynam & Widiger, 2001), as its characteristic over-control would suggest; second, it is positively correlated with anxiety (Lynam & Widiger, 2001), as its membership within the anxious and fearful cluster would suggest. Obsessives are low in openness to experience, with four of six facets showing significant negative correlations with obsessive character. Rigidity, constraint, and social conformity, not surprisingly, cause the obsessive personality to resist the influx of new ideas and to generally remain closed to experience (Warner et al., 2004). In addition, obsessive character is negatively correlated with the excitement seeking facet of extraversion (Lynam & Widiger, 2001). Finally, obsessives are commonly understood to be low in agreeableness (Samuel & Widiger, 2010) with volatility (Villemarette-Pittman et al., 2004), niggardliness (Gay, 1989), and reactance (Shapiro, 1999) translating into high antagonism (Furnham & Crump, 2005), low trust, and low compliance (Widiger & Costa, 1994).

Supporting the above described five-factor signature, tests of convergent validity conducted by Ryder, Costa, and Bagby (2007) demonstrate that obsessive character coalesces into a global trait pattern that is distinct and reliably detected. In fact, Ryder and colleagues (2007) measured all ten DSM-IV-TR personality disorders in an analogous manner, finding that obsessive compulsive personality disorder stood alone as the only personality disorder to meet convergent and divergent validity tests for every one of its facet elevations. Similarly, Morey et al. (2002) found the obsessive personality to be the most fully distinct within their trait investigation. Later research would suggest that this distinctiveness is temperamentally based (Morey et al., 2003). According to Lynam and Widiger (2001), when asked to construct a personality profile using the traits and facets of the five factor model, clinicians and researchers produced highly analogous results. Virtually all raters agreed that obsessive personality was, for example, high in conscientiousness while being low in openness, just as virtually all raters agreed that obsessive personality was high in some facets of neuroticism but low in some facets of agreeableness. So, in what appears to be a nonconventional measure of standard deviation, individual ratings were compared to the aggregate rating. Individual and aggregate ratings for obsessive compulsive personality disorder corresponded more closely than did individual and aggregate ratings for any other personality disorder. As Lynam and Widiger (2001) conclude, such reliable trait profiles suggest that there is some strong underlying concept of obsessive compulsive personality. So obsessive character, in short, is a stable and coherent pattern that is reliably recognized across time,

and which has elastically endured paradigmatic change. This strongly suggests that obsessive character is a natural behavioral complex, not just some aberration of Victorian culture or some figment of Freudian imagination.

The Purpose and Structure of the Present Article

The present work attempts to explain why obsessive character is such a coherent and reliably detected pattern; and why Freud was correct when he said that obsessive traits "... in some way belong together" (Gay, 1989, p. 294). Though it vindicates Freud's intuition, this work does so using evolutionary theory.

A previous paper questioned existing etiological theories of obsessive character (Hertler, 2014a) on the grounds that they were either contradicted by, or failed to account for, the pattern's high heritability (Reichborn-Kjennerud et al., 2007; Torgersen et al., 2000). It was alternatively suggested that an evolutionary model could most parsimoniously explain the existence of obsessive personality and its perpetuation from one generation to the next (Hertler, 2014a). Subsequently, such an evolutionary model was briefly sketched (Hertler, 2014b) and thereafter treated at length (Hertler, 2015a). In this latter work, obsessive character was described as a non-conditional, heritable behavioral complex, evolving during the Upper Paleolithic and Early Neolithic in response to changing selective pressures that came of northerly migration out of Africa. Compulsive conscientiousness, time urgency and parsimoniousness were used as examples of how obsessive psychology can be understood as an adaptation to seasonality in which death from starvation and exposure became more common than death from violence and parasitism (Hertler, 2015a). That paper (Hertler, 2015a) being most concerned with describing an evolutionary history and ecology, confined itself to separately treating three traits by way of example. This paper, in contrast, aims to treat all obsessive traits individually and describe their complementary significance as an adaptive complex. Using the above described five-factor framework, the sections that follow suggest that the obsessive pattern is not a random cacophony of traits, but an adaptive complement of traits which have become yoked together by evolutionary pressures.

The Evolutionary Rationale for the Obsessive Trait Complex

Conscientiousness: Honesty and Honest Labor

Conscientious labor is the plume of obsessive character. Diagnostically, it serves as a hallmark feature (Hertler, 2013); evolutionarily it serves as the foremost adaptation (Hertler, 2015a). Conscientiousness is the trait that often elicits caveats from clinical researchers (Millon & Davis, 1996; Villemarette-Pittman, Stanford, Greve, Houston, & Mathias, 2004) even as they emphasize obsessive dysfunction. Certainly, obsessive conscientiousness induced Salzman (1985, p. 91) to write as follows: "It is clear that obsessional behavior can increase one's efficiency and effectiveness in performing certain tasks. The tenacity that characterizes the obsessional often enables him to pursue his goals with single-minded dedication." Whether applied against the elements, used to enhance status, aimed at the attainment of wealth, or indirectly deployed to secure a mate, immoderate degrees of conscientious action increase fitness. Through conscientious action, a shelter might be rendered more secure, a seed might be planted deeper and watered more generously, additional grain might be stored more dryly, additional meat might be cured more fully. The obsessive evolved extreme conscientiousness in response to harsh northern climates where "tasks such as producing clothing and shelter eventually became as important as foraging" (Shryock & Smail, 2011, p. 90; Hertler, 2015a). In modern societies, conscientious action is most assuredly responsible for the obsessive's "...high socio-economic status, good income, and supervisory responsibilities at work, spacious living conditions and home ownership (Ullrich, Farrington, & Coid, 2007, pp. 660-661)." "These people [obsessives]," Shapiro (1999, p. 31) asserts "may be enormously productive in socially recognized ways."

In a real sense, however, conscientiousness is a *supertrait* (Dumont, 2010; Hertler, 2014b) having two poles, only one of which relates to conscientious laboring. The second pole of conscientiousness imparts “rigid moral principles,” making the obsessive “excessively conscientious, scrupulous, and inflexible about matters of morality, ethics, or values” (American Psychiatric Association, 2000, p. 726). Understanding how this aspect of conscientiousness complements the obsessive strategy comes from recognizing the strong relationship between movement and morality. After committing a crime, one *leaves town*. Similarly, the conman, like the criminal, roams from locale to locale to avoid the ramifications of reputation (Mealey, 1995). The obsessive, in contradistinction, is under the same pressure as the local small town business; both rely on iterative interactions and both thereby benefit from honest dealings and the reputation that comes of them. As will be discussed further, obsessives, by way of low sensation seeking and high anxiety, do not tend to roam far or move often (Hertler, 2014b). Also, their propensity to labor with its accrual of material goods, stable shelters and hoarded foodstuffs makes movement impractical. Finally, though it is beyond the scope of the present paper, sexual selection has worked to pair conscientious laboring with conscientious scrupulosity, as mates only benefit from the former when it is paired with the latter.

Anxiety and Compulsive Conscientiousness

Just as an engine requires gasoline to fire, an obsessive requires anxious subjectivity to power conscientious behavior:

The constant presence of tension is so much a part of their [obsessives] everyday life that it is difficult to say where personality ends and where the anxiety symptoms begin. On the positive side, many of these patients utilize the energy they derive from their tension to effective ends. Thus, the characteristic diligence and conscientiousness of compulsives reflect, in large measure, their control and exploitation of anxious energy (Millon & Davis, 1996, p. 525).

Obsessive anxiety is a temperamental characteristic that reliably, persistently and relentlessly evokes conscientious action. As Shapiro (1999) most unmistakably understands, it is temperamental anxiety that makes conscientiousness an involuntary compulsion. Only at the insistent behest of ever-present anxious subjectivity does obsessive conscientiousness become compulsory in a manner that “dilutes or displaces the normal experience of personal choice” (Shapiro, 2002, p. 79). The obsessive thereby, forgoes experiential pleasure at the beckon of obligation; obligation that is a product of mind relentlessly imposed from within, as opposed to a product of environment intermittently imposed from without. Obsessive anxiety is an adaptation to northern latitudes that cycle very slowly between warmth and bounty on one hand, to cold and scarcity on the other. While so many selective pressures are “episodic and capricious,” seasonal fluctuation is among the few selective pressures that are “period and predictable” (Wilson, 2000, p.144), thus making the evolution of such a stable union between anxious tension and compulsive conscientiousness simultaneously practicable and possible. When a behavior is an evolutionarily imperative, as anticipating period and predictable seasonal stressors is for the obsessive, natural selection favors reliably obeyed temperamental and emotional dispositions to the fickleness of conscious choice (Wilson, 1978; Wilson, 2000).

Contrasting the anxiety of the obsessive with other forms of anxiety helps to make clear its adaptive nature: It is not the anxiety of the panic disorder or the agoraphobic. Obsessive anxiety is *egosyntonic* making its presence felt deeply, persistently, and pervasively. Though grouped alongside the avoidant personality within the anxious and fearful cluster (American Psychiatric Association, 2013) and in some ways sharing the clusters anticipatory fears (Lynam & Widiger, 2001), obsessive anxiety does not debilitate; it does not invariably inspire fear or make its carrier habitually recoil from adversity. In this vein, the avoidant passively avoids risk; the obsessive actively

manages risk. Anxious tension creates compulsive action, which is deployed towards actively reducing need and threat. Because of anxious tension, the obsessive takes an active role in defense, exhibiting a kind of counter-phobia. This variety of anxiety creates an embattled mindset and evokes a “continuous sense of purpose and effort” (Shapiro, 1999, p. 44). As a result of such anxious tension, obsessives “feel harassed by responsibility and obligation” (Pollak, 1979, p. 227). Obsessive anxiety creates a subjectivity “characterized by a more or less continuous experience of tense deliberateness, a sense of effort, and of trying” (Shapiro, 1999, p. 31). The obsessive is “driven” and “pressed” to labor. As Shapiro (1999, p. 34) states, the obsessive is not only driven, but it is the driver, “issuing commands, directives, reminders, warnings, and admonitions...” Anxious tension creates an unceasing progression of “shoulds” and “musts” (Millon & Davis, 1996) that the obsessive obeys as obediently as a subject obeys his king.

Anxiety: Time Urgency, Future Orientation and Parsimonious Conservation

More than animals that must merely forage longer at high latitudes (Brockman, 2005; Panter-Brick, 1993; Wilson, 2000), humans living at high latitudes experience ever more acute time budgeting problems (Foley, 1993). For those facing the winter dearth and cold, it is eminently necessary to store and preserve food, to cultivate, to process skins...to stash foodstuffs, to collect combustibles, to cook, to construct shelters and so forth (Hertler, 2015a). At the same time that cold imposes additional burdens, it necessitates that the majority of those burdens be met within the clement months. So at once, there is more work and less time to accomplish it in. Such conditions create a powerful selective pressure described as *time stress* (Foley, 1993). In response to time stress, obsessives developed an ever present sense of time urgency, which is broadly expressed as incessant laboring, reluctance to take vacations, working through vacations, exclusion of leisure, and neglect of social relationships (American Psychiatric Association, 2013). Furthermore, it is not only time urgency, but time orientation itself that has responded to climatic stress. Anxiety, which is essentially future oriented fear, causes the obsessive to consistently subordinate the present to the service of the future. As Salzman (1985, p. 80) states, “...the obsessional is painfully aware of the future as an extension of the present; since he is constantly preoccupied with guaranteeing the future...the present does not seem to exist for itself.” Time is the potential limiting factor, the crucial resource without which plans never become realities. Unlike other resources, time cannot be conserved, and so all efforts are made to structure its passage. Obsessed by the threat and opportunity of the future, anxiety inspired *shoulds*, *oughts* and *musts* compel obsessives to squander the pleasure of the present (Salzman, 1985; Shapiro, 2002).

Likewise, the obsessive is driven by his temperamental anxiety to anticipate, prepare, conserve, stash, store and cache. DSM-IV-TR criterion five (is unable to discard worn-out or worthless objects even when they have no sentimental value) and criterion seven (adopts a miserly spending style towards both self and others; money is viewed as something to be hoarded for future catastrophes) are simply specific clinical iterations of a global strategy of parsimonious conservation and preparation (Hertler, 2013). We see this disposition in the Eastern Grey Squirrel in late fall as it scurries through suburban yards finding, taking and hoarding against the coming cold (Thorington, Koprowski, Steele, & Whatton, 2012). Unlike tropical squirrels such as the Black Giant Squirrel of South East Asia, but like the Eurasian Red Squirrel (Thorington et al., 2012) and numerous other rodent and bird species living at northern latitudes (Hertler, 2015a; Vander Wall, 1990), the Eastern Grey Squirrel expresses an invariable pattern, gathering a small range of food stuffs in autumn. In the obsessive, such preparatory proclivities are immensely more elastic, but scarcely less instinctive. The period and predictable stressors of northerly latitudes pulled for narrow instinct in the squirrel, but pulled for broad parsimoniousness within the obsessive that could be flexibly deployed towards conserving and collecting an extensive range of resources.

Through a distinctive anxious disposition which elicits compulsive conscientiousness, time urgency, future oriented thought, and parsimoniousness, the obsessive mind is reliably trained on security: security against future want; security against privation and penury; security against the elements. The anxiety stitched into the substrate of obsessive character, so often described by psychoanalysts as neurotic, does indeed cause distress (Budaev, 1999). It limits relaxation, precludes leisure and disrupts peace of mind; it goads, haunts, impels and drives its owner forward...yet forward to an evolutionarily relevant end.

Sensation Seeking and Exposure

Obsessive personality is negatively correlated with excitement seeking, a facet of extraversion (Lynam & Widiger, 2001). Excitement seeking is virtually synonymous with sensation seeking (de Bruin & Rudnick, 2007), which, in turn, is akin to novelty seeking (McCourt, Gurrera, & Cutter, 1993). Regardless of the name assigned, this highly heritable (Ebstein, 2006; Stoel, De Geus, & Boomsma, 2006) and developmentally stable (Lynne-Landsman, Graber, Nichols, & Botvin, 2011) personality disposition denotes the desire for novelty, risk and stimulation. Sensation seekers are disinhibited (Koopmans, Boomsma, Heath, & van Dooren, 1995) and impulsive (Hamidovic, Dlugos, Skol, Palmer, & de Wit, 2009; Hur & Bouchard, 1997); accordingly, they ineluctably approach the novel, the unexplored, the unprecedented (Miller & Quick, 2010). Unlike the impulsive sensation seeker, the compulsive obsessive thrives on the prosaic, the routine and the predictable. In contrast to the sensation seeker who craves risk and ambiguity (Freeman & Beer, 2010), the obsessive craves security and certainty.

Sensation seeking brings with it both opportunity and risk. On one hand, sensation seeking potentiates migration, exploration, and brief sexual encounters, which can sometimes result in increased resource acquisition, such as mating opportunities, nutrient rich food, territorial expansion and coalition formation. On the other hand, sensation seeking can engender conflict, rejection, loss and injury (Michalski & Shackelford, 2010; Nettle, 2006). The obsessive temperamentally errs on the side of caution, limiting potential risks by sacrificing potential benefits. Furthermore, it is not that low sensation seekers are simply not drawn towards stimulation, they actively avoid it. In other words, there is both a passive failure to approach and an active inclination to avoid. What the sensation seeker experiences as stimulation and possibility, the low sensation seeker experiences as stress and risk. In this way, low sensation seeking overlaps with the concept of anxiety and its related terms: risk aversion, loss aversion and harm avoidance; and indeed, the obsessive character is anxious (American Psychiatric Association, 2000), risk averse (Chapman et al., 2007) and harm avoidant (Spinhoven, Bamelis, Molendijk, Haringsma, & Arntz, 2009). Along these lines, low sensation seeking, in its fullest sense, and in concert with anxiety, functions to limit risk, exposure, predation and threat; a bet-hedging position that elicits local and routine living in an environment that can be monitored and controlled. Thus uncertain windfalls are not staked against local reputation, the social mate and patiently accrued resources that are the products of other obsessive features.

Openness and Order

The obsessive seeks data, trends and information (Gallagher, South, & Oltmanns, 2003) that might improve his ability to make accurate predications and thereby control outcomes. In seeking to understand his world as governed by discoverable precepts, the obsessive sometimes suppresses nuances, aberrations and randomness. The obsessive is dogmatic, opinionated and rigid (Shapiro, 1999), expressing resistance to innovation, a reactionary bent, and an appetite for the conventional, comprehensible and knowable. All such features are illustrative of the obsessive personality's low openness to experience (Lynam & Widiger, 2001). In some sense, low openness is simply a cognitive complement of low sensation seeking. Order, predictability and safety are the conditions not only actively sought and struggled towards, but psychologically constructed. A temperamentally stable non-con-

ditional specialist (Hertler, 2014c), obsessives only evolved after ecological release from density dependent stressors. These density dependent selective pressures are often capricious, unpredictable and biotic; malarial infection and competition induced murder being examples. Only with a relative absence of these capricious, unpredictable density dependent selective pressures can the obsessive expect to reap the long term benefits of extreme conscientiousness, fidelity, resource accrual and parsimonious hoarding; thus only under these conditions did obsessive character evolve. Cognitively through low openness, and temperamentally through low sensation seeking, the obsessive's routine and risk averse behaviors are disposing him towards environmental microniches that magnify the lower density dependent mortality risks of the northly macro-environment.

In another sense, the obsessive's low openness is an outgrowth of feeling embattled and internally urged to action by anxious tension. Closed to experience, obsessives temperamentally seek serviceable patterns from which algorithms can be constructed and adopted for behavioral guidance, as do non-obsessives when situationally stressed (Hertler, 2015b). In this vein, the logic of the obsessive's low openness to experience can be further explained through an analogy to government: The energy and vigor of the absolute monarch contrasts with the slow bounded actions of the democratic republic. While their ultimate success is only as certain as the fickleness of human sagacity, monarchs can respond to immediate threats with resolution and speed, precisely because the decision making process is not open to deliberation and input from legislative or judicial interference. Democratic republics with systems of checks and balances cannot act with such vigor, though neither are they subject to the interests, folly or corruption of a single individual. As Revolutionary War General Charles Lee said, "we cannot expect expedition from democratic councils-it is a curse annexed to the blessing" (Mazzagetti, 2013, p.150). This lack of requisite Republican expedition during wartime explains how Napoleon usurped power, and why dictatorial powers were repeatedly pressed upon Washington during the American Revolution (Ferling, 2011; Fowler, 2011). There are then differing demands of war and peace. In peace, a nation of laws and formal processes protect individual liberties. Democratic republics are open to petition, lobbies, media and public opinion. They absorb social change, allow diversity and protect disadvantaged minority groups. In war, the decision of a monarch becomes desirable. Not unpredictably, under internal and external threats, democratic governments have developed mechanisms, such as the suspension of *habeas corpus*, which act to instill monarchical energy for a time. The Roman dictator is perhaps the most dramatic example of a republic temporarily deviating from a tradition of specified law in acquiescence to exigencies. Self-preservation demands that even the most exceptionally free governments respond to threat by restricting openness to demonstration, openness to free speech and openness to deliberation. There is a relationship, in sum, between the level of perceived threat and the level of openness. Individual minds express a range of openness approximating some point along a continuum from the closed decisiveness of the monarch to the open deliberation of a democracy. The obsessive, being a fixed strategist with a persistently anxious and fearful worldview, feels embattled. He perceives threat and feels the need for compensatory action. Like the wartime government, the obsessive, fearing randomness and stochasticity, while also being compelled towards conscientious action and future oriented preparation, constricts attention, acts on rigidly held dogmas and abides by undoubted precepts, all of which manifest as low openness to experience. In conclusion, the urgency of the obsessive's anxious mind and the correspondent need for action have coevolved a complementary lack of openness to experience; these dispositions have become coupled by selective pressures.

Agreeableness and Social Interest

Reluctant to delegate authority, rigid and stubborn (American Psychiatric Association, 2013), the surly and disagreeable obsessive (Furnham & Crump, 2005) manifests minimal agreeableness via low trust (Samuel & Widiger,

2010), low altruism and low compliance (Widiger & Costa, 1994). Agreeableness is a socially desirable trait that has been regularly equated with psychological health, relational competence and general well-being (American Psychiatric Association, 2013). Socially desirable as it may be, agreeableness, in certain contexts and persons, can cause excessive trust and pliancy leaving one open to exploitation and manipulation (Nettle, 2006). In the context of the obsessive strategy, considering the means employed to reach its ends, high agreeableness would undermine adaptive fitness. Focusing in turn on each pertinent facet of agreeableness (trust, altruism and compliance) will demonstrate the adaptive rationale of the obsessive's hypervigilance, self-interested disposition and jealously guarded autonomy.

Obsessives are moderately mistrustful. The obsessive world view evokes what Morey, Grilo, Zanarini, and Gunderson refer to as "stress related paranoia" (Morey et al., 2004, p. 451; Hertler, 2014b). Amplified surveillance and threat detection is, in some sense then, a natural outgrowth of the obsessive's anxious and fearful disposition. Furthermore, skepticism and a modicum of mistrust serve to protect the fruits of obsessive conscientiousness, whether they are crops that have been planted, food that has been stored, mates that have been secured, or a shelter that has been constructed. Obsessives are conscientious workers and resource hoarders that generally have more to protect from thieves and usurpers. Consequently, low trust complements conscientiousness and parsimoniousness, thereby protecting property and person from cuckoldry, theft, innovation, chicanery and manipulation.

In addition to low trust, the obsessive expresses low altruism. While it is likely that the obsessive will exhibit standard levels of altruistic behavior towards relatives (kin-selection), the obsessive's self-reliant conscientiousness suggests that he will be less apt than most to behave altruistically towards unrelated individuals (reciprocal altruism). Reciprocally altruistic behaviors ensure survival through rather indirect means, in that they exchange present risks or costs for potential future reciprocation (Ashton, Paunonen, Helmes, & Jackson, 1998; Fletcher & Zwick, 2006; Trivers, 1971). The limited altruism exhibited by the obsessive would be incongruously maladaptive to the highly socially integrated who survive primarily through a network of relationships and a system of reciprocity. However, within the global context of obsessive character it is complementary. This is mainly because the obsessive would so often be on the giving end of such exchanges. One has to only think of the tragedy of the commons or of communal ownership. Communal sharing invites social loafing. If the obsessive is to work harder than others and accrue more than others, and at the same time generously share with them as is the custom of many hunter gatherers (Mann, 2012), he would incur a net loss. This net loss would undermine the whole of the obsessive strategy. If obsessive conscientiousness were not paired with restricted trust and altruism, the obsessive personality would be a dominated strategy. The obsessive, in conclusion, is oriented towards independence and self-reliance, as opposed to communion and interdependence, because self-sufficient industriousness complements niggardliness.

Finally, obsessives manifest low compliance (Widiger & Costa, 1994). Being extremely time urgent (Salzman, 1985) and subject to complying with internal 'shoulds' and 'musts' (Millon & Davis, 1996), the obsessive feels pressed forward to fulfill his personal agenda. Obsessives are much like trains on tracks; they stay on a fixed course unless violently derailed. Obsessives resist complying with an external master because they are already complying with an internal one: "The obsessive-compulsive person functions like his own overseer issuing commands, directives, reminders, warnings, and admonitions..." (Shapiro, 1999, p. 34). To the degree that they obey someone else, they often have to disobey themselves. Though their rigid adherence to internal dictates and standards now only translates into vocational productivity (Kyrios, Nedeljkovic, Moulding, & Doron, 2007) when

obsessives are given latitude to personally interpret and execute work, it was consistently adaptive in less integrated and complex ancestral environments where obsessives lived more insularly and followed their own will more freely.

Summary of the Model

The indelible obsessive signature observed across time, theorists and paradigms has herein been described as an evolved union of traits. A driving anxious tension is the emotional core of obsessive character. It is this essential temperamental feature that goads him to work, spurs him to action, provokes him to labor, and, in brief, compels him to behave so very conscientiously. It is the overt conscientious action that directly confers adaptive advantage, though anxious subjectivity and this degree of extreme conscientious behavior are truly interdependent features. Together, they create and actualize a driving urgency to labor in the absence of immediate, external impetus. Hoarding, miserliness, and most generally parsimoniousness, are complementary adaptations to climatic stress, inducing obsessives to gather and conserve resources against the predictable coming of cold, dearth and want. Having such a strong drive to accrue resources, it is then adaptive to have strong drives to protect those resources; and this complementary drive to protect resources is expressed through low trust, which elicits vigilance, and low altruism, which elicits stinginess. With the aid of chance and time, these traits coalesced because they were more valuable in aggregate than in isolation. Once grouped within individuals, these traits were inter-generationally transmitted because they effectively coped with seasonal stressors. The obsessive trait complex inclines the obsessive to occupy a finite range, live routinely within a small stable group, accruing status and honestly obtained resources that promote the maintenance, defense, survival and perpetuation of the obsessive and his family within predictably harsh northerly latitudes.

Discussion

Freud wrote that obsessive traits “belong together,” he thought this “incontestable.” Yet his use of the word “somehow,” as in “somehow belong together,” demonstrates his inability to explain his conviction (Gay, 1989, p. 294; Freud, 1908/1959). Freud’s eminent followers such as Janet (Janet & Paul, 1925), Salzman (1985) and Shapiro (1999), system builders like Millon and Davis (1996), the American Psychiatric Association (2000, 2013), and contemporary research, all find obsessives to produce a reliable and distinctive signature. Thus, even separated by time and paradigm, trait theorists like Lynam and Widiger (2001) readily agree with Freud that there is a strong underlying concept of obsessive compulsive personality. Yet, as with Freud, those that came after Freud have been unable to convincingly justify their intuition.

It is not that Freud or any successive theory or theorist entirely lacked an explanation for the coherence of obsessive traits; it is more precise to say that any such explanation remains an implicit extension of its respective etiological theory. Obsessive character is understood to be a syndrome, and the traits that comprise it are understood to be symptoms. Ostensibly, these symptoms co-occur, producing the reliably detected syndrome, because they are occasioned by a distinctive style of authoritarian parenting (Eskedal & Demetri, 2006; Horney, 1950; Pollak, 1987; Sullivan, 1956). Tyrannical parenting, with its conditional positive regard and its severe over-control, putatively impresses character on children as a brand marks a bull. Even modern psychoanalysts like Mallinger (2009) who acknowledge some degree of inborn temperamental influence, believe that “early experiences and perceptions,” functioning as “hearth, hammer, and anvil” organizing temperamental features into “coordinated adaptive trait clusters, or styles” (Hertler, 2014a, p. 171). Mallinger is then representative of many who believe that pathological early experiences organized obsessive temperamental features into an ill-coordinated and maladaptive trait cluster.

It must be recognized that these implicit explanations as to why obsessive traits cohere into a reliably detected pattern, like the etiologies upon which they rest, are untenable. In that they stress environmental influence above genetic influence, and thereafter familial environmental influence over extra-familial environmental influence, psychoanalytic etiologies are incompatible with behavioral genetics research (Reichborn-Kjennerud et al., 2007; Torgersen et al., 2000), which suggests that obsessive character is a highly heritable pattern not significantly influenced by shared in families environmental factors (Hertler, 2014a).

The present evolutionary model, arguing that obsessive traits contribute to a coherent and unified behavioral pattern well adapted to seasonal harshness, is not only consistent with the high heritability of obsessive character (Torgersen et al., 2000), but generally consilient (Whewell, 1840/2011; Wilson, 1998) and congruent with behavioral explanation within the life sciences. In suggesting that obsessive traits are coevolved, complementary and interdependent,

obsessive personality is more aptly understood as a behavioral profile (van Oers & Sinn, 2013), a behavioral syndrome (Carere & Maestripieri, 2013) a coherent behavioral package (Nettle, 2006), an evolved set of correlated characteristics (Westneat & Fox, 2010), or a suite of adaptations (Careau, Bininda-Emonds, Thomas, Réale, & Humphries, 2009; Michalski & Shackelford, 2010) (Hertler, 2014b, p. 58)ⁱⁱ.

Coming from evolutionary biology and behavioral ecology, these related terms explain covarying trait clusters within animal species (Bell, 2007; Brakefield & Zwaan, 2011; Carter, Goldizen, & Tromp, 2010; Kortet & Hedrick, 2007; Maurer, 2009; Mowles, Cotton, & Briffa, 2012; Nettle, 2011; Sih, Bell, & Johnson, 2004; Sih, Bell, & Johnson, 2010; Wolf, van Doorn, & Weissing, 2008). They show that traits do not randomly vary within populations, but strategically covary (Westneat & Fox, 2010). Olson and Miller (1958) were among the first to study trait covariance (Sih, Bell, & Johnson, 2004; Pigliucci & Preston, 2004) and “in the past decade,” Carere and Maestripieri (2013, p. 2) state, “a growing number of studies have shown that consistent individual differences in one trait covary with other behavioral and physiological traits, and that suites of traits may evolve and be maintained by natural selection.” Behavioral biologists and ecologists recognize the similarity between the covarying behavioral suites within the animals they study and human personality; and, in consequence, many of them are now using the term *animal personality* in preference to behavioral syndrome, adaptive suite or any other related term (Gosling & Mehta, 2013).

Just as some biologists recognize that behavioral syndromes are analogous to human personality, so some few psychologists recognize that human personality is analogous to behavioral syndromes. While most personality psychologists continue to study the adaptive value of individual traits, some have appreciated the strategic interdependence of trait complexes. The most illustrious example is the antisocial or psychopathic personality, which, across many overlapping iterations, has been treated evolutionarily by a select few for thirty years (Brune, 2008; Cohen & Machalek, 1988; Harpending & Sobus, 1987; Kenrick, Dantchik, & MacFarlane, 1983; Kofoed & MacMillan, 1986; MacMillan & Kofoed, 1984; Wilson, Near, & Miller, 1996). As others have done before and since, Mealey (1995) explains how the psychopathic personality, for all its immorality and criminality, is an evolved strategy rather than an acquired disorder. Nevertheless, Mealey seems to most effectively explain how sociopathic traits strategically covary, and why they have become reliably bundled by evolution. The sociopath possesses blunted *secondary emotions*, such as anxiety, empathy, and guilt, which have been traditionally understood as symptoms. However, Mealey explains that restricted anxiety allows antisocial acts to be contemplated calmly and with an outward display of glib charm; limited empathy allows exploitation to proceed unhindered; limited guilt allows ill-gotten gains to be unabashedly enjoyed rather than penitently returned. These blunted secondary emotions

combine with high sensation seeking, impulsivity and a disposition to roam (Mealey, 1995) to perpetuate a parasitic life style (Hare & Vertommen, 2003). Mealey's (1995) antisocial, then, is a coherent behavioral package in that multiple traits strategically covary in service of a particular adaptive end. Though antisocial and obsessive strategies are in almost every respect opposite (Hertler, 2014b), both might have been shaped into coherent behavioral packages by evolutionary pressures (Hertler, 2014b). Just as the antisocial combined restricted anxiety, empathy and guilt with high sensation seeking, impulsivity and roving behavior to exploit honest population members, so the obsessive combined anxious tension, future oriented thought and conscientiousness with low sensation seeking, compulsivity and routinized behavior to cope with predictably harsh seasonality.

Notes

i) Nomenclature: Herein obsessive compulsive personality disorder, as described by the American Psychiatric Association's DSM-V, is referred to as *obsessive personality*, *obsessive character* or simply *obsessive*. In part, this nomenclature was chosen for its economy. Still more importantly, these labels are inclusive, subsuming clinical and non-clinical manifestations of the obsessive personality pattern.

ii) Coherent behavioral packages and genetic recombination: Though many (Brakefield & Zwaan, 2011; Carter, Goldizen, & Tromp, 2010; Kortet & Hedrick, 2007; Maurer, 2009; Mowles, Cotton, & Briffa, 2012; Nettle, 2011; Sih, Bell, & Johnson, 2004; Sih, Bell, & Johnson, 2010; Wolf, van Doorn, & Weissing, 2008) observe, study and research suites of traits or coherent behavioral packages which reliably cluster together, the genetics of these coordinated trait clusters are still being scrutinized. Pfennig and Pfennig (2012) study character displacement, the divergence of competing species, which often involves "changes in complex suites of traits" as detailed in, for example, the research of Smith and Rausher (2008). Within the context of character displacement, Pfennig and Pfennig (2012, p. 88) explain that it is especially necessary to mechanistically explain how coordinated trait clusters are intergenerationally transmitted. Citing Wolf et al. (2010), Pfennig and Pfennig (2012, p. 88) note that it is presently uncertain whether coordinated trait clusters "arise through a single locus with large effect versus many loci with small effects." If coordinated trait clusters arise through a single genetic locus, that locus must have great downstream effects to explain the coordinated trait cluster, but at the same time that single locus would not get scrambled by genetic recombination. Alternatively, if coordinated trait clusters arise through multiple loci, those loci would have to survive the scrambling of genetic recombination, but at the same time those loci could easily explain the entire coordinated trait cluster.

Funding

The author has no funding to report.

Competing Interests

The author has declared that no competing interests exist.

Acknowledgments

The author has no support to report.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Ashton, M. C., Paunonen, S. V., Helmes, E., & Jackson, D. N. (1998). Kin altruism, reciprocal altruism, and the Big Five personality factors. *Evolution and Human Behavior*, 19(4), 243-255. doi:10.1016/S1090-5138(98)00009-9

- Bell, A. M. (2007). Future directions in behavioural syndromes research. *Proceedings of The Royal Society B: Biological Sciences*, 274(1611), 755-761. doi:10.1098/rspb.2006.0199
- Brakefield, P. M., & Zwaan, B. J. (2011). Seasonal polyphenisms and environmentally induced plasticity in the Lepidoptera: The coordinated evolution of many traits on multiple levels. In T. Flatt & A. Heyland (Eds.), *Mechanisms of life history evolution: The genetics and physiology of life history traits and trade-offs* (pp. 243-252). New York, NY: Oxford University Press.
- Brockman, D. K. (2005). What do studies of seasonality in primates tell us about human evolution? In D. K. Brockman & C. P. van Schaik (Eds.), *Seasonality in primates: Studies of living and extinct human and non-human primates* (pp. 543-570). New York, NY: Cambridge University Press.
- Brune, M. (2008). *Textbook of evolutionary psychiatry: The origins of psychopathology*. New York, NY: Oxford University Press.
- Budaev, S. V. (1999). Sex differences in the Big Five personality factors: Testing an evolutionary hypothesis. *Personality and Individual Differences*, 26(5), 801-813. doi:10.1016/S0191-8869(98)00179-2
- Careau, V., Bininda-Emonds, O. R. P., Thomas, D. W., Réale, D., & Humphries, M. M. (2009). Exploration strategies map along fast-slow metabolic and life-history continua in murid rodents. *Functional Ecology*, 23(1), 150-156. doi:10.1111/j.1365-2435.2008.01468.x
- Carere, C., & Maestripieri, D. (2013). *Animal personalities: Behavior, physiology, and evolution*. Chicago, IL: University of Chicago Press.
- Carter, A. J., Goldizen, A. W., & Tromp, S. A. (2010). Agamas exhibit behavioral syndromes: Bolder males bask and feed more but may suffer higher predation. *Behavioral Ecology*, 21(3), 655-661. doi:10.1093/beheco/arq036
- Chapman, A. L., Lynch, T. R., Rosenthal, M. Z., Cheavens, J. S., Smoski, M. J., & Krishnan, K. R. R. (2007). Risk aversion among depressed older adults with obsessive compulsive personality disorder. *Cognitive Therapy and Research*, 31(2), 161-174. doi:10.1007/s10608-006-9114-x
- Cohen, L. E., & Machalek, R. (1988). A general theory of expropriative crime: An evolutionary ecological approach. *American Journal of Sociology*, 94(3), 465-501. doi:10.1086/229027
- de Bruin, G. P., & Rudnick, H. (2007). Examining the cheats: The role of conscientiousness and excitement seeking in academic dishonesty. *South African Journal of Psychology*, 37(1), 153-164. doi:10.1177/008124630703700111
- Dumont, F. (2010). *A history of personality psychology: Theory, science, and research from Hellenism to the twenty-first century*. New York, NY: Cambridge University Press.
- Ebstein, R. P. (2006). The molecular genetic architecture of human personality: Beyond self-report questionnaires. *Molecular Psychiatry*, 11(5), 427-445. doi:10.1038/sj.mp.4001814
- Eskedal, G. A., & Demetri, J. M. (2006). Etiology and treatment of cluster C personality disorders. *Journal of Mental Health Counseling*, 28(1), 1-17.
- Ferling, J. (2011). *Independence: The struggle to set America free*. London, United Kingdom: Bloomsbury Press.

- Fletcher, J. A., & Zwick, M. (2006). Unifying the theories of inclusive fitness and reciprocal altruism. *American Naturalist*, 168(2), 252-262. doi:10.1086/506529
- Foley, R. A. (1993). The influence of seasonality on hominid evolution. In S. J. Ulijaszek & S. S. Strickland (Eds.), *Seasonality and human ecology: 35th symposium volume of the Society for the Study of Human Biology* (pp. 17-37). New York, NY: Cambridge University Press.
- Fowler, W. M. (2011). *American crisis: George Washington and the dangerous two years after Yorktown*. New York, NY: Walker and Company.
- Freeman, H. D., & Beer, J. S. (2010). Frontal lobe activation mediates the relation between sensation seeking and cortisol increases. *Journal of Personality*, 78(5), 1497-1528. doi:10.1111/j.1467-6494.2010.00659.x
- Freud, S. (1959). Character and anal eroticism. In J. Strachey (Ed.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 9, pp. 167-175). London, United Kingdom: The Hogarth Press. (Original work published 1908)
- Furnham, A., & Crump, J. (2005). Personality traits, types, and disorders: An examination of the relationship between three self-report measures. *European Journal of Personality*, 19(3), 167-184. doi:10.1002/per.543
- Gallagher, N. G., South, S. C., & Oltmanns, T. F. (2003). Attentional coping style in obsessive-compulsive personality disorder: A test of the intolerance of uncertainty hypothesis. *Personality and Individual Differences*, 34(1), 41-57. doi:10.1016/S0191-8869(02)00025-9
- Gay, P. (1989). *The Freud reader*. New York, NY: W. W. Norton.
- Gosling, S. D., & Mehta, P. H. (2013). Personalities in a comparative perspective: What do human psychologists glean from animal personality studies? In C. Carere & D. Maestripieri (Eds.), *Animal personalities: Behavior, physiology, and evolution* (pp. 124-145). Chicago, IL: University of Chicago Press.
- Hamidovic, A., Dlugos, A., Skol, A., Palmer, A. A., & de Wit, H. (2009). Evaluation of genetic variability in the dopamine receptor D2 in relation to behavioral inhibition and impulsivity/sensation seeking: An exploratory study with *d*-amphetamine in healthy participants. *Experimental and Clinical Psychopharmacology*, 17(6), 374-383. doi:10.1037/a0017840
- Hare, R. D., & Vertommen, H. (2003). *The Hare psychopathy checklist-revised*. Toronto, ON: Multi-Health Systems, Inc.
- Harpending, H. C., & Sobus, J. (1987). Sociopathy as an adaptation. *Ethology and Sociobiology*, 8(Suppl. 1), 63-72. doi:10.1016/0162-3095(87)90019-7
- Hertler, S. C. (2013). Understanding obsessive-compulsive personality disorder: Reviewing the specificity and sensitivity of DSM-IV-TR diagnostic criteria. *SAGE Open*, 3(3), 1-10. doi:10.1177/2158244013500675
- Hertler, S. C. (2014a). A review and critique of obsessive compulsive personality disorder etiologies: Reckoning with heritability estimates. *Europe's Journal of Psychology*, 10(1), 168-184. doi:10.5964/ejop.v10i1.679
- Hertler, S. C. (2014b). The continuum of conscientiousness: Antagonistic interests among obsessive and antisocial personalities. *Polish Psychological Bulletin*, 45(1), 52-63. doi:10.2478/ppb-2014-0008
- Hertler, S. C. (2014c). *Obsessive personality as an adaptive anachronism: The operation of phylogenetic inertia upon obsessive populations in Western modernity*. Manuscript submitted for publication.

- Hertler, S. C. (2015a). Migration load, ecological opportunity, and obsessive compulsive personality disorder etiology: Obsessive character as an adaptation to seasonality. *Evolutionary Psychological Science*, 1, 52-67. doi:10.1007/s40806-014-0009-x
- Hertler, S. C. (2015b). Using urgent states to understand obsessive traits: Promoting a phenomenological apperception of obsessive compulsive personality disorder. *International Review of Social Sciences and Humanities*, 8(2), 20-25. http://www.irssh.com/volumes/vol_8_no_2_january_2015
- Horney, K. (1950). *Neurosis and human growth*. New York, NY: W.W. Norton & Company
- Hur, Y.-M., & Bouchard, T. J., Jr. (1997). The genetic correlation between impulsivity and sensation seeking traits. *Behavior Genetics*, 27(5), 455-463. doi:10.1023/A:1025674417078
- Janet, P., & Paul, E. (1925). *Psychological healing: A historical and clinical study*. New York, NY: G. Allen & Unwin.
- Kenrick, D. T., Dantchik, A., & MacFarlane, S. (1983). Personality, environment, and criminal behavior: An evolutionary perspective. In W. S. Laufer & J. M. Day (Eds.), *Personality theory, moral development and criminal behavior* (pp. 217-242). Lexington, MA: D.C. Heath & Co.
- Kofoed, L., & MacMillan, J. (1986). Alcoholism and antisocial personality: The sociobiology of an addiction. *The Journal of Nervous and Mental Disease*, 174(6), 332-335. doi:10.1097/00005053-198606000-00003
- Koopmans, J. R., Boomsma, D. I., Heath, A. C., & van Dooren, L. J. P. (1995). A multivariate genetic analysis of sensation seeking. *Behavior Genetics*, 25(4), 349-356. doi:10.1007/BF02197284
- Kortet, R., & Hedrick, A. (2007). A behavioural syndrome in the field cricket *Gryllus integer*: Intrasexual aggression is correlated with activity in a novel environment. *Biological Journal of the Linnean Society*, 91(3), 475-482. doi:10.1111/j.1095-8312.2007.00812.x
- Kyrios, M., Nedeljkovic, M., Moulding, R., & Doron, G. (2007). Problems of employees with personality disorders: The exemplar of obsessive compulsive personality disorder (OCPD). In J. Langan-Fox, C. L. Cooper, & R. J. Klimoski (Eds.), *Research companion to the dysfunctional workplace: Management challenges and symptoms* (pp. 40-57). Northampton, MA: Edward Elgar.
- Lynam, D. R., & Widiger, T. A. (2001). Using the five-factor model to represent the *DSM-IV* personality disorders: An expert consensus approach. *Journal of Abnormal Psychology*, 110(3), 401-412. doi:10.1037/0021-843X.110.3.401
- Lynne-Landsman, S. D., Graber, J. A., Nichols, T. R., & Botvin, G. J. (2011). Is sensation seeking a stable trait or does it change over time? *Journal of Youth and Adolescence*, 40(1), 48-58. doi:10.1007/s10964-010-9529-2
- MacMillan, J., & Kofoed, L. (1984). Sociobiology and antisocial personality: An alternative perspective. *The Journal of Nervous and Mental Disease*, 172(12), 701-706. doi:10.1097/00005053-198412000-00001
- Mallinger, A. (2009). The myth of perfection: Perfectionism in the obsessive personality. *American Journal of Psychotherapy*, 63(2), 103-131.
- Mann, M. (2012). *The sources of social power: Volume I: A history of power from the beginning to AD 1760*. New York, NY: Cambridge University Press.
- Maurer, B. A. (2009). Spatial patterns of species diversity in terrestrial environments. In S. A. Levin (Ed.), *The Princeton guide to ecology* (pp. 464-473). Princeton, NJ: Princeton University Press.

- Mazzagetti, D. (2013). *Charles Lee: Self before country*. New Brunswick, NJ: Rutgers University Press.
- McCann, J. T. (2009). Obsessive-compulsive and negativistic personality disorders. In P. H. Blaney & T. Millon (Eds.), *Oxford text book of psychopathology* (pp. 671-691). New York, NY: Oxford University Press.
- McCourt, W. F., Gurrera, R. J., & Cutter, H. S. G. (1993). Sensation seeking and novelty seeking: Are they the same? *The Journal of Nervous and Mental Disease*, *181*(5), 309-312. doi:10.1097/00005053-199305000-00006
- Mealey, L. (1995). The sociobiology of sociopathy: An integrated evolutionary model. *Behavioral and Brain Sciences*, *18*(3), 523-541. doi:10.1017/S0140525X00039595
- Michalski, R. L., & Shackelford, T. K. (2010). Evolutionary personality psychology: Reconciling human nature and individual differences. *Personality and Individual Differences*, *48*(5), 509-516. doi:10.1016/j.paid.2009.10.027
- Miller, C. H., & Quick, B. L. (2010). Sensation seeking and psychological reactance as health risk predictors for an emerging adult population. *Health Communication*, *25*(3), 266-275. doi:10.1080/10410231003698945
- Millon, T., & Davis, R. D. (1996). *Disorders of personality DSM-IV and beyond*. New York, NY: John Wiley & Sons.
- Morey, L. C., Grilo, C. M., Zanarini, M. C., & Gunderson, J. G. (2004). Temporal coherence of criteria for four personality disorders. *Journal of Personality Disorders*, *18*(4), 394-398. doi:10.1521/pedi.2004.18.4.394
- Morey, L. C., Gunderson, J. G., Quigley, B. D., Shea, M. T., Skodol, A. E., McGlashan, T. H., . . . Zanarini, M. C. (2002). The representation of borderline, avoidant, obsessive-compulsive, and schizotypal personality disorders by the five-factor model. *Journal of Personality Disorders*, *16*(3), 215-234. doi:10.1521/pedi.16.3.215.22541
- Morey, L. C., Warner, M. B., Shea, M. T., Gunderson, J. G., Sanislow, C. A., Grilo, C., . . . McGlashan, T. H. (2003). The representation of four personality disorders by the schedule for nonadaptive and adaptive personality dimensional model of personality. *Psychological Assessment*, *15*(3), 326-332. doi:10.1037/1040-3590.15.3.326
- Mowles, S. L., Cotton, P. A., & Briffa, M. (2012). Consistent crustaceans: The identification of stable behavioural syndromes in hermit crabs. *Behavioral Ecology and Sociobiology*, *66*(7), 1087-1094. doi:10.1007/s00265-012-1359-7
- Nettle, D. (2006). The evolution of personality variation in humans and other animals. *The American Psychologist*, *61*(6), 622-631. doi:10.1037/0003-066X.61.6.622
- Nettle, D. (2011). Evolutionary perspectives on the five-factor model of personality. In D. M. Buss & P. H. Hawley (Eds.), *The evolution of personality and individual differences* (pp. 5-28). New York, NY: Oxford University Press.
- Olson, E. C., & Miller, R. L. (1958). *Morphological integration*. Chicago, IL: University of Chicago Press.
- Panter-Brick, C. (1993). Seasonal organization of work patterns. In S. J. Ulijaszek & S. S. Strickland (Eds.), *Seasonality and human ecology: 35th symposium volume of the society for the study of human biology* (pp. 220-234). New York, NY: Cambridge University Press.
- Pfennig, D. W., & Pfennig, K. S. (2012). *Evolution's wedge: Competition and the origins of diversity*. Berkeley, CA: University of California Press.
- Pfohl, B., & Blum, N. (1991). Obsessive-compulsive personality disorder: A review of available data and recommendations for DSM-IV. *Journal of Personality Disorders*, *5*(4), 363-375. doi:10.1521/pedi.1991.5.4.363

- Pigliucci, M., & Preston, K. (2004). *Phenotypic integration*. Oxford, United Kingdom: Oxford University Press.
- Pollak, J. M. (1979). Obsessive-compulsive personality: A review. *Psychological Bulletin*, *86*(2), 225-241. doi:10.1037/0033-2909.86.2.225
- Pollak, J. M. (1987). Obsessive-compulsive personality: Theoretical and clinical perspectives and recent research findings. *Journal of Personality Disorders*, *1*(3), 248-262. doi:10.1521/pedi.1987.1.3.248
- Reichborn-Kjennerud, T., Czajkowski, N., Neale, M. C., Ørstavik, R. E., Torgersen, S., Tambs, K., . . . Kendler, K. S. (2007). Genetic and environmental influences on dimensional representations of DSM-IV cluster C personality disorders: A population-based multivariate twin study. *Psychological Medicine*, *37*(5), 645-653. doi:10.1017/S0033291706009548
- Ryder, A. G., Costa, P. T., & Bagby, R. M. (2007). Evaluation of the SCID-II personality disorder traits for DSM-IV: Coherence, discrimination, relations with general personality traits, and functional impairment. *Journal of Personality Disorders*, *21*(6), 626-637. doi:10.1521/pedi.2007.21.6.626
- Salzman, L. (1985). *Treatment of the obsessive personality*. Northvale, NJ: Jason Aronson.
- Samuel, D. B., & Widiger, T. A. (2008). A meta-analytic review of the relationship between the five-factor model and the DSM-IV-TR personality disorders: A facet level analysis. *Clinical Psychology Review*, *28*(8), 1326-1342. doi:10.1016/j.cpr.2008.07.002
- Samuel, D. B., & Widiger, T. A. (2010). A comparison of obsessive-compulsive personality disorder scales. *Journal of Personality Assessment*, *92*(3), 232-240. doi:10.1080/00223891003670182
- Samuel, D. B., & Widiger, T. A. (2011). Conscientiousness and obsessive-compulsive personality disorder. *Personality Disorders*, *2*(3), 161-174. doi:10.1037/a0021216
- Shapiro, D. (1999). *Neurotic styles*. New York, NY: Basic Books.
- Shapiro, D. (2002). *Dynamics of character*. New York, NY: Basic Books.
- Shryock, A., & Smail, D. L. (2011). *Deep history: The architecture of past and present*. Los Angeles, CA: University of California Press.
- Sih, A., Bell, A., & Johnson, J. C. (2004). Behavioral syndromes: An ecological and evolutionary overview. *Trends in Ecology & Evolution*, *19*(7), 372-378. doi:10.1016/j.tree.2004.04.009
- Sih, A., Bell, A. M., & Johnson, J. C. (2010). Behavioral syndromes. In D. F. Westneat & C. W. Fox (Eds.), *Evolutionary behavioral ecology* (pp. 516-530). Oxford, United Kingdom: Oxford University Press.
- Smith, R. A., & Rausher, M. D. (2008). Experimental evidence that selection favors character displacement in the ivyleaf morning glory. *American Naturalist*, *171*(1), 1-9. doi:10.1086/523948
- Spinhoven, P., Bamelis, L., Molendijk, M., Haringsma, R., & Arntz, A. (2009). Reduced specificity of autobiographical memory in cluster C personality disorders and the role of depression, worry and experiential avoidance. *Journal of Abnormal Psychology*, *118*(3), 520-530. doi:10.1037/a0016393
- Stoel, R. D., De Geus, E. J. C., & Boomsma, D. I. (2006). Genetic analysis of sensation seeking with an extended twin design. *Behavior Genetics*, *36*(2), 229-237. doi:10.1007/s10519-005-9028-5

- Sullivan, H. (1956). *The complete works of Harry Stack Sullivan* (Vol. 1). New York, NY: W. W. Norton
- Thorington, R. W., Jr., Koprowski, J. L., Steele, M. A., & Whatton, J. F. (2012). *Squirrels of the world*. Baltimore, MD: Johns Hopkins University Press.
- Torgersen, S., Lygren, S., Øien, P. A., Skre, I., Onstad, S., Edvardsen, J., . . . Kringlen, E. (2000). A twin study of personality disorders. *Comprehensive Psychiatry*, *41*(6), 416-425. doi:10.1053/comp.2000.16560
- Trivers, R. L. (1971). The evolution of reciprocal altruism. *The Quarterly Review of Biology*, *46*(1), 35-57. doi:10.1086/406755
- Ullrich, S., Farrington, D. P., & Coid, J. W. (2007). Dimensions of DSM-IV personality disorders and life-success. *Journal of Personality Disorders*, *21*(6), 657-663. doi:10.1521/pedi.2007.21.6.657
- van Oers, K., & Sinn, D. L. (2013). Quantitative and molecular genetics of animal personality. In C. Carere & D. Maestripieri (Eds.), *Animal personalities: Behavior, physiology, and evolution* (pp. 149-200). Chicago, IL: University of Chicago Press.
- Vander Wall, S. B. (1990). *Food hoarding in animals*. Chicago, IL: Chicago University Press.
- Villemarette-Pittman, N. R., Stanford, M. S., Greve, K. W., Houston, R. J., & Mathias, C. W. (2004). Obsessive compulsive personality disorder and behavioral disinhibition. *The Journal of Psychology*, *138*(1), 5-22. doi:10.3200/JRLP.138.1.5-22
- Warner, M. B., Morey, L. C., Finch, J. F., Gunderson, J. G., Skodol, A. E., Sanislow, C. A., . . . Grilo, C. M. (2004). The longitudinal relationship of personality traits and disorders. *Journal of Abnormal Psychology*, *113*(2), 217-227. doi:10.1037/0021-843X.113.2.217
- Westneat, D., & Fox, C. W. (2010). *Evolutionary behavioral ecology*. Oxford, NY: Oxford University Press.
- Whewell, W. (1840/2011). *The philosophy of the inductive sciences: Founded upon their history*. Toronto, Canada: University of Toronto Libraries.
- Widiger, T. A., & Costa, P. T. (1994). Personality and personality disorders. *Journal of Abnormal Psychology*, *103*(1), 78-91. doi:10.1037/0021-843X.103.1.78
- Widiger, T. A., Trull, T. J., Clarkin, J. F., Sanderson, C., & Costa, P. T. (2002). A description of the personality disorders with the five-factor model of personality. In T. A. Widiger & T. A. Costa (Eds.), *Personality disorders and the five-factor model of personality*. Washington, DC: American Psychological Association.
- Wilson, D. S., Near, D., & Miller, R. R. (1996). Machiavellianism: A synthesis of the evolutionary and psychological literatures. *Psychological Bulletin*, *119*(2), 285-299. doi:10.1037/0033-2909.119.2.285
- Wilson, E. O. (1978). *On human nature*. Cambridge, MA: Harvard University Press.
- Wilson, E. O. (1998). *Consilience: The unity of knowledge*. New York, NY: Vintage Books.
- Wilson, E. O. (2000). *Sociobiology: The new synthesis: 25th anniversary edition*. Cambridge, MA: Harvard University Press.
- Wolf, M., van Doorn, G., & Weissing, F. J. (2008). Evolutionary emergence of responsive and unresponsive personalities. *PNAS Proceedings of The National Academy of Sciences of The United States of America*, *105*, 15825-15830. doi:10.1073/pnas.0805473105

About the Author

Steven C. Hertler is a licensed examining psychologist teaching graduate courses in psychopathology, differential diagnosis, testing & assessment and Rorschach methods for the College of New Rochelle, as well as undergraduate course in introductory psychology, biological basis of behavior, brain and behavior and social psychology at other two other colleges. His research program, centering on personality disorders generally and obsessive personality specifically, uses an emerging understanding of personality and individual differences, behavioral genetics, evolution, and ecology to alternatively explain classic character types.