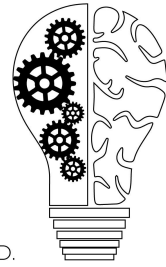


## Episode 099: The Big Five: Conscientiousness

### Part 2

Alexis Carnduff, Maddie Ulrich, Kyle Logan, Alec Zane, Matthew Hagele, M.A., David Puder, M.D.



DAVID PUDER, M.D.

**PSYCHIATRY &  
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This PDF is a supplement to the podcast “Psychiatry & Psychotherapy” found on [iTunes](#), [Google Play](#), [Stitcher](#), [Overcast](#), [PlayerFM](#), [PodBean](#), [TuneIn](#), [Podtail](#), [Blubrry](#), [Podfanatic](#)

There are no conflicts of interest for this episode.

In Conscientiousness Part 1 we explored the sub-facets of conscientiousness, summarizing the advantages and disadvantages of each. Today, in Part 2, we will focus largely on conscientiousness in daily life, psychopathology, and therapy.

Review of the Big Five:

- Extroversion: gregariousness, enthusiasm, assertiveness
- Neuroticism: anxiety, impulsivity, anger
- Agreeableness: compassion, politeness, maternal tendencies
- Openness: abstract ideas, moved by art and music
- Conscientiousness contains these domains:
  - Competence: good judgement, keeps informed, makes intelligent decisions
  - Order: Likes things in place, picky about how jobs should be done
  - Dutifulness: attends work/school even when under the weather, pays debts quickly, does jobs carefully
  - Achievement striving: clear about goals, works towards goals in an orderly way, strives to achieve and be excellent at what they do
  - Self-discipline: paces oneself well to meet deadlines, possesses self discipline
  - Deliberation: rarely makes decisions in haste, always considers consequences, plans trips carefully, thinks twice before answering

### **Behavior is often driven by personal goals**

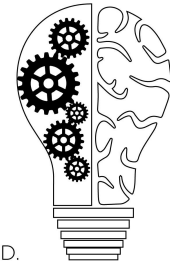
High-conscientious individuals tend to exercise initiative in setting and achieving goals, and make sacrifices in order to achieve those goals.

A 26-week study of salespeople found that conscientiousness is correlated with sales volume ( $r = .21$ ), and a correlation between a salesman’s conscientiousness and supervisor’s satisfaction of job performance ( $r = .29$ ). Assumptions about conscientiousness and goal setting were also

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observed with conscientious people having more commitment to accomplishing their goals ( $r = .35$ ) ([Barrick et al.1993](#)).

*Intercorrelation Matrix*

Variable	1	2	3	4	5	6	7	8	9	10	<i>M</i>	<i>SD</i>
1. General mental ability	<b>.85</b>										28.00	5.90
2. Conscientiousness	-.07	<b>.89</b>									2.62	0.22
3. Extraversion	-.10	-.03	<b>.85</b>								2.42	0.30
4. Emotional stability	-.14	<b>.41**</b>	-.03	<b>.85</b>							2.41	0.34
5. Agreeableness	-.04	<b>.25**</b>	-.04	<b>.34**</b>	<b>.67</b>						2.54	0.21
6. Openness to experience	-.03	.08	<b>.28**</b>	.12	-.17	<b>.86</b>					2.49	0.28
7. Prior goal setting	.00	<b>.39**</b>	<b>.19*</b>	<b>.19*</b>	.04	.14	<b>.90</b>				0.74	0.39
8. Goal commitment	.05	<b>.35**</b>	.11	<b>.27**</b>	.13	.15	<b>.26**</b>	<b>.80</b>			4.59	0.38
9. Sales volume	.12	<b>.21*</b>	-.01	.03	-.01	.08	<b>.23*</b>	<b>.21*</b>	<b>.67</b>		0.00	0.74
10. Supervisory ratings of job performance	<b>.22*</b>	<b>.29**</b>	.04	-.09	.15	.15	<b>.34**</b>	<b>.25*</b>	<b>.21*</b>	<b>.50</b>	3.65	0.71

*Note.*  $N = 91$ . Values in boldface represent coefficient alpha estimates, except for the performance measures, which were assumed to be .67 for sales volume and .50 for supervisory ratings of job performance. The sales volume reliability estimate was based on a sample-weighted reliability estimate for sales measures reported in a recent meta-analysis for objective measures assessed over 26 weeks (Hunter, Schmidt, & Judiesch, 1990). The average interrater reliability of a single supervisor's rating of .50 was based on the average mean estimate reported by Rothstein (1990).

\*  $p < .05$ , one-tailed. \*\*  $p < .01$ , one-tailed.

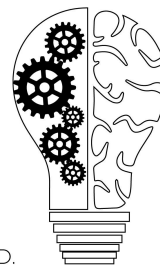
Table 1. Intercorrelation Matrix" [Barrick, et al. \(1993\)](#)

A different study looked at the connection between orderliness (a facet of conscientiousness), disgust, and political beliefs. The authors found a small correlation between orderliness and political conservatism of  $r = .13$  but did not find an association between industriousness and political orientation. The authors also found a correlation between orderliness and disgust ( $r = .22$ ) and went into detail about possible evolutionary mechanisms for this correlation ([Xu, X. et al. 2019](#)).

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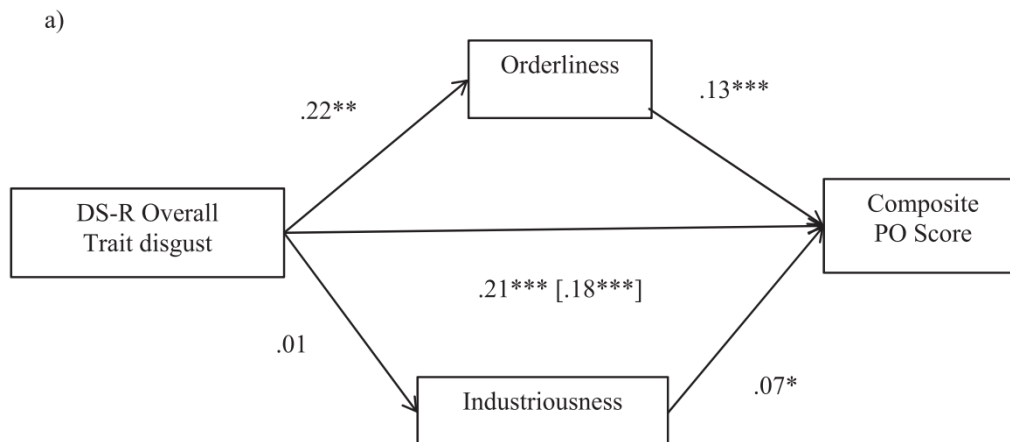
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“Figure 2a. Relationships among Orderliness, Industriousness, trait disgust, and the composite political orientation (PO) score” ([Xu, X., et al. 2019](#))

## Advantages and disadvantages of high conscientiousness

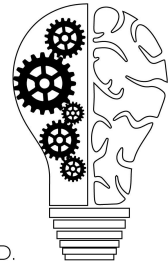
### *Advantages*

There are many reasons why high levels of conscientiousness can be beneficial for an individual. Higher levels of conscientiousness are associated with less arrests, better BMI, increased longevity and much more. Given the associations with many significant life outcomes, is it important to understand how individuals with high conscientiousness obtain a healthy, wealthy, and happy life. These associations may also provide insight on the progression of conscientiousness across the lifespan. Conscientious individuals choose positive, foundation-building behaviors within particular domains, like exercising and studying, which often corresponds with denying short-term, enjoyable gains, like relaxing in front of the TV or going out with friends. One study viewed this as a tendency to “invest” in one’s future, similar to how someone would invest money instead of letting it burn a hole in their pocket ([Hill and Jackson, 2016](#)). According to the study, the “invest and accrue” model of conscientiousness is a way of looking at a high conscientious person’s lifespan and explaining how individual choices a

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person makes in the present will affect the trajectory of their future in the long run. People higher in conscientiousness are more forward-thinking. They are willing to ‘suffer’ and give up things temporarily in the present for long term rewards in the future.

Higher conscientiousness is also associated with higher empathy. A study found a correlation of .445 of conscientiousness and empathy which was only exceeded by agreeableness with a correlation of .532 ([Melchers, et al. 2016](#)).

## Disadvantages of conscientiousness

### *Risk of perfectionism and workaholism*

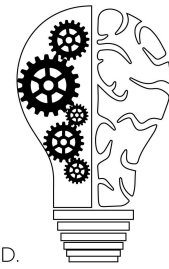
One interesting study showed greater drops in life satisfaction following unemployment for those higher in conscientiousness, with a correlation between 0.2 and 0.3. There means there is a larger drop in well-being for high conscientiousness people following a job termination. If you’re high in conscientiousness, you might be very impacted by the feeling from one particular difficult exam or failure.

If you end up being a therapist for someone with high conscientiousness, and you are not high in conscientiousness, it is important to try and understand why it would be so devastating for them to lose their job. Empathy towards that person may sound like, “you value work and moving forward in your career. It would be so devastating to lose that ability even for this period of time. I can see why you would get down on yourself.” If you are not as high in conscientiousness you might not understand just how important career is going to be to your patient for their happiness. People with different levels of conscientiousness will have different levels of happiness that come from career. This difference in life satisfaction was pronounced for people 1 standard deviation above the mean ([Boyce 2010](#)).

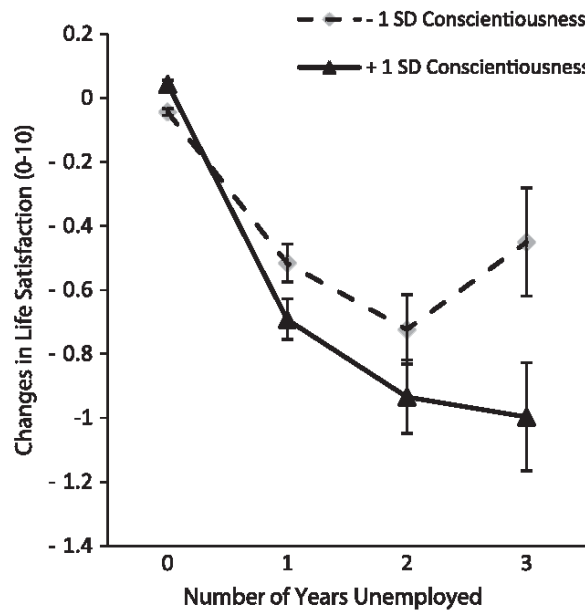
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Multilevel analyses of the effect of unemployment on life satisfaction.

Dependent variable Independent variables	Regression 1: life satisfaction at T				Regression 2: life satisfaction at T			
	b	SE	$\beta$	d	b	SE	$\beta$	d
Life satisfaction at T = 0	0.53	0.01	.53***		0.50	0.01	.50***	
Conscientiousness at T = 0	0.04	0.01	.03***		0.07	0.01	.04***	
<i>Unemployment dummy variables</i>								
Unemployed for 1 year at T	-0.60	0.05	-.06***	-0.37***	-0.76	0.07	-.07***	-0.46***
Unemployed for 2 years at T	-0.83	0.08	-.04***	-0.50***	-0.79	0.14	-.04***	-0.47***
Unemployed for 3 years at T	-0.72	0.13	-.02***	-0.44***	-1.31	0.21	-.05***	-0.80***
<i>Interaction terms</i>								
Conscientiousness at T = 0 × unemployed for 1 year at T	-0.13	0.04	-.01***	-0.08***	-0.13	0.05	-.01**	-0.08**
Conscientiousness at T = 0 × unemployed for 2 years at T	-0.15	0.07	-.01*	-0.09*	-0.14	0.08	-.01	-0.08
Conscientiousness at T = 0 × unemployed for 3 years at T	-0.32	0.11	-.01**	-0.19**	-0.40	0.11	-.02***	-0.25***

Notes: No controls were included in Regression 1 -  $\chi^2(8) = 5261.43$  ( $p < .001$ ); Regression 2 used pre-unemployment age, gender and household income controls; this included both the level and interaction terms (the individual's education level and the relevant interaction terms are not included as controls here since the education level of some participants is not reported. However, the inclusion of education controls, although reducing the sample size, did not change the results substantively) -  $\chi^2(20) = 5515.88$  ( $p < .001$ ); d-scores were obtained by conducting a regression on life satisfaction standardized across all individuals and all years analyzed (2006-2008).

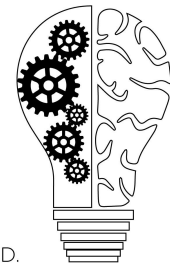
\*  $p < .05$ .  
 \*\*  $p < .01$ .

Based on a study in 2016, people who are very high in conscientiousness fare poorly under conditions of high stress (Carter 2016). The study showed that high people with very high conscientiousness had more obsessive-compulsive behavior compared to their moderate peers. For those unfamiliar with the diagnoses, Obsessive Compulsive Personality Disorder is not the same as Obsessive Compulsive Disorder. OCD is a disorder where one has obsessive thoughts (like being contaminated by touching a door handle) that usually produce a compulsion to do something (washing their hands multiple times). OCPD is conscientiousness taken to the extreme. This individual may not be able to get started in the morning unless all of their to-do lists are organized. It's the extreme of orderliness to the point that it actually gets in the way of accomplishing goals. "Taken to the extreme: (a) competence can be conceptualized as

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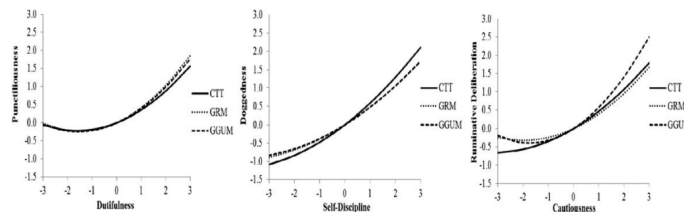
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perfectionism, a pathological striving toward perfection; (b) orderliness as fastidiousness, an obsession with cleanliness and order; (c) dutifulness as punctiliousness, an obsession with attaining moral behavioral standards; (d) achievement motivation as workaholism, an obsession with achievement and perfection in work-related tasks; (e) self-discipline as doggedness, evinced by single-minded, rigid determination; and (f) cautiousness as ruminative deliberation, a tendency to overthink and stall action to avoid unwanted or uncertain outcomes” ([Carter, 2016, p.511](#)).

**Table 3** Model-Data Fit for Linear and Curvilinear Models Predicting Obsessive-Compulsive Tendencies from Their Corresponding Conscientiousness Facets

Scoring Approach	Predictive Model	Fit Statistics					RMSEA 90% CI	
		$\chi^2$	df	TLI	SRMR	RMSEA	Low	High
CTT	Linear	552.44	51	.944	.151	.104	.096	.112
	Curvilinear	584.43	138	.964	.104	.060	.055	.065
GRM	Linear	564.45	51	.945	.155	.105	.097	.113
	Curvilinear	613.02	138	.967	.110	.061	.056	.066
GGUM	Linear	557.06	51	.943	.154	.104	.097	.112
	Curvilinear	646.12	138	.963	.112	.064	.058	.069

Note. N = 912.

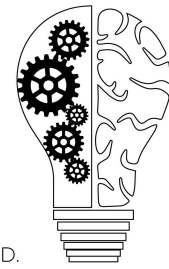


**Figure 3** Curvilinear relations for: a) dutifulness/punctiliousness, b) self-discipline/doggedness, and c) cautiousness/ruminative deliberation by scoring approach.

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**Table 5** Path Coefficients for the Linear and Curvilinear Terms by Facet and Outcome Variable

Well-being Facet	Conscientiousness Facet	CTT			GRM			GGUM		
		$\gamma_L$	$\gamma_C$	Inflection Point (Percent Affected)	$\gamma_L$	$\gamma_C$	Inflection Point (Percent Affected)	$\gamma_L$	$\gamma_C$	Inflection Point (Percent Affected)
Job Satisfaction	Competence	.06	-.05	—	.12	-.08	<b>.73(23.3%)</b>	.12	-.09	<b>.63(26.4%)</b>
	Orderliness	.03	.02	—	.06	.03	—	.05	.02	—
	Dutifulness	.01	-.03	—	-.03	-.03	—	-.02	-.04	—
	Achievement motivation	.03	-.01	—	.04	-.01	—	.06	-.01	—
	Self-discipline	<b>.12</b>	<b>-.10</b>	<b>.59(27.8%)</b>	<b>.14</b>	<b>-.11</b>	<b>.65(25.7%)</b>	<b>.14</b>	<b>-.10</b>	<b>.72(23.6%)</b>
Life Satisfaction	Cautiousness	-.01	.01	—	-.01	.01	—	-.02	.01	—
	Competence	.03	-.01	—	.13	-.03	—	.14	.00	—
	Orderliness	.06	-.04	—	.10	-.04	—	.09	-.01	—
	Dutifulness	.15	.00	—	.07	.04	—	.08	.01	—
	Achievement Motivation	-.03	-.04	—	.00	-.05	—	.06	-.01	—
Negative Affect	Self-discipline	.17	-.05	—	.12	-.05	—	.06	-.02	—
	Cautiousness	-.18	.04	—	-.18	.05	—	-.15	.05	—
	Competence	-.05	.11	<b>.21(41.7%)</b>	-.07	.03	—	-.05	<b>.09</b>	<b>.29(38.6%)</b>
	Orderliness	.00	-.02	—	-.06	-.02	—	.03	-.02	—
	Dutifulness	.00	.05	—	-.04	<b>.06</b>	<b>.27(39.4%)</b>	-.12	.10	<b>.60(27.4%)</b>
Positive Affect	Achievement Motivation	.02	.05	—	.07	.10	—	.08	.03	—
	Self-discipline	-.08	-.02	—	-.12	-.04	—	-.09	.07	<b>.66(25.4%)</b>
	Cautiousness	-.10	.01	—	-.06	.00	—	-.11	.08	<b>.70(24.2%)</b>
	Competence	.13	.02	—	.15	-.04	—	.17	-.03	—
	Orderliness	.03	-.05	—	.03	-.07	<b>.20(42.1%)</b>	.04	-.06	<b>.31(37.8%)</b>
Self Esteem	Dutifulness	.07	-.01	—	.03	.02	—	.05	.04	—
	Achievement Motivation	.26	.08	—	.33	.07	—	.30	.02	—
	Self-discipline	.22	-.02	—	.11	-.04	—	.12	-.02	—
	Cautiousness	-.22	.01	—	-.20	.01	—	-.21	.03	—
	Competence	.18	-.12	<b>.72(23.6%)</b>	.19	-.12	<b>.79(21.5%)</b>	.21	-.12	<b>.90(18.4%)</b>
Work Stress	Orderliness	-.01	.00	—	.01	-.04	—	.01	-.02	—
	Dutifulness	.03	-.03	—	.09	.01	—	.11	.01	—
	Achievement Motivation	.09	.00	—	.05	-.02	—	.05	-.02	—
	Self-discipline	.20	-.02	—	.22	.00	—	.20	.00	—
	Cautiousness	.00	.05	—	-.02	.02	—	-.02	.05	—
Work Stress	Competence	-.01	.00	—	-.03	.03	—	-.03	.03	—
	Orderliness	.06	.02	—	.03	.01	—	.04	.01	—
	Dutifulness	-.04	.01	—	-.03	-.03	—	-.04	-.01	—
	Achievement Motivation	.16	.04	—	.14	-.01	—	.14	.00	—
	Self-discipline	-.11	.05	—	-.06	.08	—	-.08	.07	—
Cautiousness	-.10	-.05	—	-.09	-.03	—	-.07	-.04	—	

Note. Numbers in bold indicate the value is statistically significant at  $p < .05$ .  $N = 912$ .

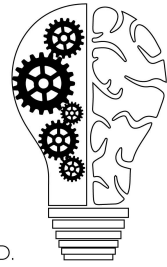
### Conscientiousness and emotions

One study looked at the relationship between conscientiousness and emotions. They found that conscientiousness had a significant relationship with general negative affect (population correlation of  $\rho = -.33$ ), most basic emotions (median correlation of (.22), proneness to guilt (.21), and the experience of guilt (-.32) ([Fayard, 2012](#)).

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## Conscientiousness in daily life

What does a highly conscientious person look like? How do they interact with those around them? What does low conscientiousness look like in practical terms? It is helpful to recognize these common signs in order to better relate to patients and to people in general.

### *High conscientiousness*

There are certain behaviors that are associated with conscientiousness. A study in 2009 scientifically categorized ten of these behaviors ([Hirsh, 2009](#)).

Conscientiousness associations:

- *Discussed sexual matters with a male friend (-.23)*
  - They would probably be less likely to talk about sexual matters with their therapist or psychiatrist, even if it's currently happening. This is why we need to bring it up as mental health professionals.
- *Lounged around my house without any clothes on (-.22)*
- *Picked up a hitch-hiker (-.21)*
- *Read a tabloid paper (-.19)*
- *Drove or rode in a car without a seatbelt (-.19)*
- *Swore around other people (-.18)*
- *Spent an hour at a time daydreaming (-.18)*
- *Shopped at a second-hand thrift shop (-.18)*
- *Told a dirty joke (-.18)*
- *Listened to music (+.18)*

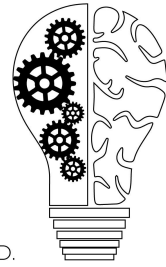
Another study found people with high conscientiousness having cortical thickening of the prefrontal cortex. This is the same part of the brain that deals with delay of gratification ([Riccelli, 2017](#)).



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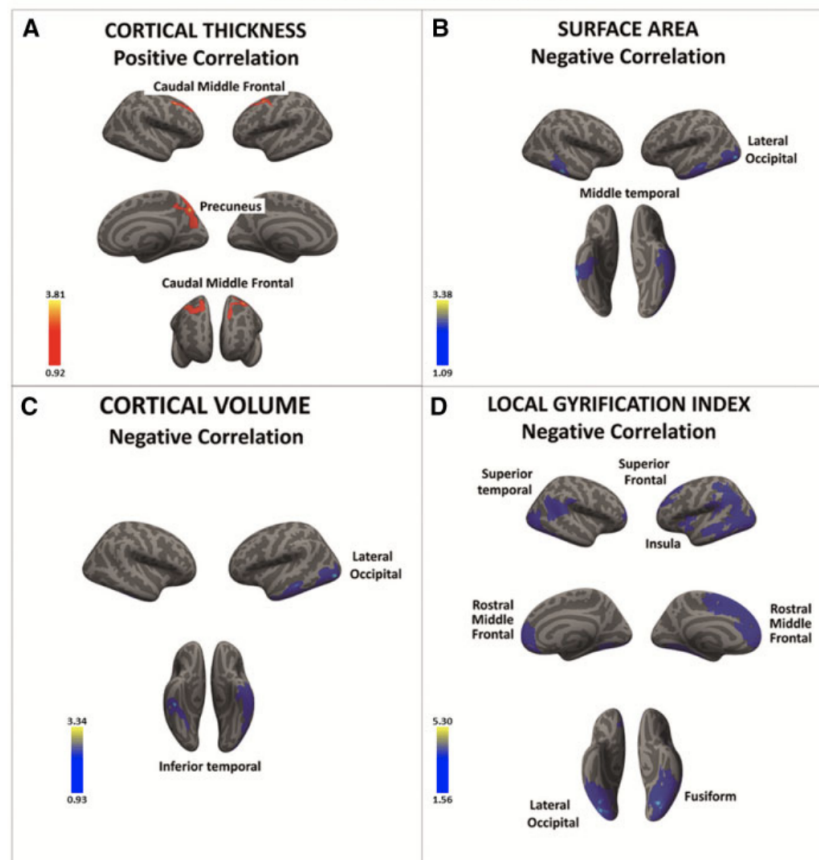
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### CONSCIENTIOUSNESS



We can change our brain. We know that this is not purely genetic and a lot of it is our environment (parenting and choices that are made change the brain over time). Studies show that we can make choices to strengthen certain areas of our brain through meditation and strength training. Setting a budget and practicing discipline changes the way our brain is wired over time. We can also rewire how empathic we are by practicing empathic stances.

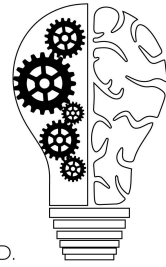
#### *Low conscientiousness*

People lower in conscientiousness may seem disorganized and tend to be unreliable and careless. They are procrastinators, less driven to succeed, and exhibit less goal-oriented behaviors. According to [Dewitte & Schouwenburg \(2002\)](#), the most typical symptom of

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procrastination is underperformance, which is caused by not having enough time to do one's best work. Conscientiousness seems to explain most of the variation in procrastination items, regardless of the metric used. Conscientiousness and procrastination have a -.69 correlation. In general, people who are high conscientious are not procrastinators ([Dewitte & Schouwenburg, 2002](#)).

Table 1. The intercorrelations (decimals omitted) of the input, intermediate, and criterion variables of the proposed linear model (phase 1)

	Domains			Aspects of impulsivity				
	2	3	4	5	6	7	8	9
1. Extraversion	24*	05	21*	-25*	06	<b>38</b>	17*	-11
2. Neuroticism—		07	18*	-02	-37	20*	14	-10
3. Conscientiousness			-05	<b>38</b>	-46	-11	<b>64</b>	-69
4. Openness				-06	-04	26*	00	-06
5. Premeditation				<i>0.24</i>	-39	-32	<b>32</b>	-38
6. Urgency					<i>0.38</i>	10	-38	<b>39</b>
7. Sensation seeking						<i>0.23</i>	02	08
8. Perseverance							<i>0.43</i>	-72
9. Procrastination								<i>0.61</i>

*n* = 147.

Boldface  $p < 0.0001$ ; \* $p < 0.05$ .

In italics on the diagonal is the explained variance in the fitting path model (Figure 1).

“Table 1. The intercorrelations (decimals omitted) of the input, intermediate, and criterion variables of the proposed linear model (phase 1)” ([Dewitte & Schouwenburg, 2002](#))

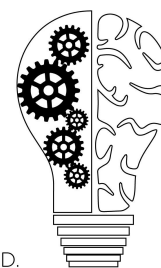
### Career success

In [Judge \(1999\)](#) the correlation between conscientiousness and job satisfaction was the most consistent result in this study (0.42), or about 18% variance.

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*Relationship Between Big Five Traits, General Mental Ability,  
and Intrinsic Career Success*

Individual difference	<i>r</i>	$\beta$	<i>R</i> / <i>R</i> <sup>2</sup>
<b>Big Five trait</b>			
Childhood neuroticism	-.22*	-.02	
Childhood extraversion	-.06	.00	
Childhood openness to experience	.21*	.12	
Childhood agreeableness	.13	.05	
Childhood conscientiousness	.40**	.34**	
<i>R</i>			.42**
<i>R</i> <sup>2</sup>			.18**
$\Delta R^2$			.09**
<b>General mental ability</b>			
Childhood general mental ability	.30**	.11	
<i>R</i>			.30**
<i>R</i> <sup>2</sup>			.09**
$\Delta R^2$			.00
<i>R</i> (traits + general mental ability)			.42**

*Note:* *r* = simple correlation.  $\beta$  = standardized beta weight from regression. *R* and *R*<sup>2</sup> values are when block of traits or cognitive ability were entered alone. Incremental ( $\Delta$ )*R*<sup>2</sup> values are when the block of traits was entered after cognitive ability, or when cognitive ability was entered after the block of traits. *N* (listwise) = 118.

\* *p* < .05 \*\* *p* < .01

### Longer lifespans

The Terman Life-City Study of children [Friedman \(1993\)](#) showed: “The magnitudes of the effects for low conscientiousness and low cheerfulness (relative hazards between 1.2 and 1.3) are comparable to other known risk factors for mortality (systolic blood pressure and serum cholesterol, have been found to have relative hazards of approximately 1.3 and 1.2)” ([Friedman et al. 1993](#)).

What’s even more important is a person’s social support, including marriage quality, contact with friends and family, and group membership. If you have poor relationships, the hazard ratio ranges from 1.5-2. Thinking about this in the context of current suicidality (at least one suicide thought in the last month), which is 10%, a recent CDC study asked unpaid caregivers if they had one suicidal thought within the last month and 30% said “yes.” This high hazard ratio, with the lack of quality relationships and difficulty forming them, leads to an increased risk of mortality.

### Conscientiousness and Subjective Well-Being (SWB)

A 1998 study looked at the relationship between personality traits and SWB, and found a 0.22 correlation between SWB and conscientiousness ([DeNeve and Cooper. 1998](#)).

## Episode 099: The Big Five: Conscientiousness

### Part 2

Alexis Carnduff, Maddie Ulrich, Kyle Logan, Alec Zane, Matthew Hagele, M.A., David Puder, M.D.



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*Overall Correlation and Contrasts for Each SWB Conceptualization With Personality*

Big Five Factor × SWB Conceptualization	$r(+)$	$k$	$df$	$\chi^2$
Life satisfaction			4, $k = 244$	76.44*
Extraversion	.17 <sub>a</sub>	54		
Agreeableness	.16 <sub>a</sub>	49		
Conscientiousness	.22 <sub>b</sub>	97		
Neuroticism	-.24 <sub>c</sub>	44		
Openness to Experience	.14 <sub>d</sub>	27		
Happiness			4, $k = 71$	96.31*
Extraversion	.27 <sub>a</sub>	15		
Agreeableness	.19 <sub>b</sub>	14		
Conscientiousness	.16 <sub>b</sub>	15		
Neuroticism	-.25 <sub>a</sub>	18		
Openness to Experience	.06 <sub>c</sub>	15		
Positive affect			4, $k = 126$	27.78*
Extraversion	.20 <sub>b</sub>	39		
Agreeableness	.17 <sub>a</sub>	21		
Conscientiousness	.14 <sub>b</sub>	24		
Neuroticism	-.14 <sub>b</sub>	38		
Openness to Experience	.14 <sub>b</sub>	11		
Negative affect			4, $k = 102$	185.38*
Extraversion	-.07 <sub>a</sub>	32		
Agreeableness	-.13 <sub>b</sub>	16		
Conscientiousness	-.10 <sub>b</sub>	17		
Neuroticism	.23 <sub>c</sub>	31		
Openness to Experience	.05 <sub>d</sub>	9		

*Note.* SWB = subjective well-being;  $r(+)$  = average weighted correlation;  $k$  = number of independent samples. Correlations with different subscripts differed significantly at  $p < .01$ .

\*  $p < .001$ .

## Driving safety

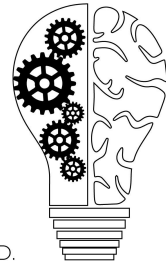
Adult differences in conscientiousness, and agreeableness, may reflect internalized tendencies in regulating anger and frustration. Presumably, conscientious people are better at resisting temptation (e.g. speeding) and controlling anger and negative affect (e.g. hostile reactions to being cut off in traffic). In a meta-analysis of vehicular accident research, [Arthur, Barrett, and Alexander \(1991\)](#) identified four categories of variables: personality, cognitive ability, information-processing, and demographic variables.

- Methods used: Goldberg's 100 Unipolar Markers, NEO-FFI, and Driving Behavior Questionnaire (DBQ)
- Results: multivariate analysis of variance (MANOVA) was used to test for differences between the accident and no-accident groups on the five personality factors. Results of the overall MANOVA, using the Hotelling-Lawley Trace statistic, were significant,  $F(5, 221) = 2.43, p < .05$ .

## Episode 099: The Big Five: Conscientiousness

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**At-Fault Accident and No-Accident Group Differences on the Big Five: College Sample**

	Accident group		No-accident group		<i>t</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Goldberg adjective scales					
Extraversion <sup>a</sup>	5.71	1.07	5.48	1.15	-1.42
Agreeableness	6.03	.97	6.15	1.00	0.82
Conscientiousness	6.04	.97	6.42	1.18	2.63*
Neuroticism <sup>b</sup>	4.69	.94	4.81	.99	0.89
Openness <sup>c</sup>	6.63	1.00	6.47	1.13	-1.02

Note. All tests are one-tailed. At-fault *N* = 83; No-Accident *N* = 144.

a. Surgency.

b. Emotional Stability (reverse scored).

c. Intellect.

\**p* < .01.

The results of this study suggest that individuals who describe themselves as self-disciplined, responsible, reliable, and dependable are less likely to be involved in driving accidents than those who describe themselves as lower on these attributes.

## Conscientiousness and psychopathology

Conscientiousness has shown consistent and robust associations with mental disorders across the lifespan. It also has moderate to strong associations with all major forms of psychopathology.

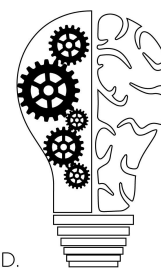
### *Axis 1 disorders*

Low conscientiousness has very large effect sizes (Cohen's  $d > 1.0$ ) with Axis 1 disorders ([Kotov, et al. 2010](#)). This means that people who were lower in conscientiousness had an increase in depression, anxiety, OCD, and substance use disorders. This came from a quantitative review of 66 meta-analyses and 175 studies published from 1980 to 2007 reviewing associations between the Big Five personality types and depression, anxiety, and substance use disorders (SUD).

## Episode 099: The Big Five: Conscientiousness

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PERSONALITY AND MENTAL DISORDERS

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Table 4  
Average Effect Sizes Corrected for Unreliability of Personality Scales

Disorder	Neuroticism		Extraversion		Disinhibition		Conscientiousness		Agreeableness		Openness	
	<i>d</i>	80% CrI	<i>d</i>	80% CrI	<i>d</i>	80% CrI	<i>d</i>	80% CrI	<i>d</i>	80% CrI	<i>d</i>	80% CrI
MDD	<b>1.33</b> [0.44, 2.23]		-0.62 [-1.36, 0.13]		0.28 [-0.09, 0.65]		<b>-0.90</b> [-1.42, -0.39]		-0.14 [-0.78, 0.49]		-0.21 [-0.88, 0.47]	
Unipolar	<b>1.54</b> [0.92, 2.17]		<b>-0.92</b> [-1.54, -0.30]		<b>0.25</b> [0.25, 0.25]		<b>-1.13</b> [-1.88, -0.39]		-0.17 [-0.46, 0.11]		-0.12 [-0.40, 0.17]	
Dysthymic disorder	<b>1.93</b> [1.01, 2.84]		<b>-1.47</b> [-2.47, -0.47]		<b>1.09</b> [0.39, 1.78]		<b>-1.24</b> [-1.39, -1.09]		0.26 [-0.69, 1.21]		<b>-0.57</b> [-1.13, -0.01]	
GAD	<b>1.96</b> [1.33, 2.60]		<b>-1.02</b> [-1.86, -0.18]		<b>0.44</b> [0.22, 0.65]		<b>-1.13</b> [-1.51, -0.76]		0.18 [-0.67, 1.04]		-0.40 [-1.04, 0.25]	
PTSD	<b>2.25</b> [1.23, 3.27]		<b>-0.79</b> [-1.55, -0.03]		-0.02 [-0.68, 0.63]		<b>-1.02</b> [-1.50, -0.54]		-0.70 [-2.38, 0.99]		-0.30 [-0.99, 0.39]	
Panic disorder	<b>1.92</b> [1.12, 2.72]		<b>-1.07</b> [-1.81, -0.34]		0.05 [-0.54, 0.65]		<b>-0.98</b> [-1.43, -0.53]		0.08 [-0.64, 0.81]		-0.41 [-1.09, 0.26]	
Agoraphobia	<b>1.61</b> [0.86, 2.36]		<b>-0.98</b> [-1.82, -0.13]		0.15 [-0.11, 0.41]		<b>-0.96</b> [-1.20, -0.73]		0.52 [-0.02, 1.05]		<b>-0.70</b> [-1.32, -0.08]	
Social phobia	<b>1.63</b> [0.76, 2.49]		<b>-1.31</b> [-2.54, -0.08]		0.19 [-0.16, 0.54]		<b>-1.06</b> [-1.52, -0.61]		0.32 [-0.50, 1.14]		-0.47 [-1.09, 0.16]	
Specific phobia	<b>0.92</b> [0.30, 1.53]		-0.20 [-0.65, 0.26]		<b>-0.17</b> [-0.17, -0.17]		<b>-0.67</b> [-1.25, -0.08]		0.00 [-0.25, 0.25]		-0.10 [-0.44, 0.23]	
OCD	<b>2.07</b> [1.25, 2.90]		<b>-1.12</b> [-1.85, -0.39]		<b>0.63</b> [0.04, 1.22]		<b>-0.97</b> [-1.46, -0.47]		-0.06 [-0.69, 0.57]		-0.14 [-0.87, 0.60]	
SUD	<b>0.97</b> [0.13, 1.81]		-0.36 [-1.02, 0.29]		<b>0.72</b> [0.36, 1.08]		<b>-1.10</b> [-1.84, -0.36]		-0.60 [-1.30, 0.10]		-0.16 [-0.72, 0.40]	
Alcohol	<b>0.77</b> [0.02, 1.51]		-0.32 [-0.98, 0.35]		<b>0.71</b> [0.32, 1.11]		<b>-0.90</b> [-1.77, -0.03]		-0.44 [-1.33, 0.44]		-0.04 [-0.62, 0.55]	
Mixed	<b>1.14</b> [0.20, 2.09]		-0.39 [-0.93, 0.14]		<b>0.71</b> [0.51, 0.92]		<b>-1.34</b> [-1.79, -0.89]		<b>-0.74</b> [-1.18, -0.30]		-0.30 [-0.71, 0.10]	
Drugs	<b>1.13</b> [0.63, 1.63]		<b>-0.33</b> [-0.61, -0.04]		<b>0.68</b> [0.40, 0.97]		<b>-1.02</b> [-1.62, -0.42]		<b>-0.75</b> [-1.11, -0.39]		-0.38 [-0.98, 0.23]	
<i>M</i>	1.65		-0.90		0.33		-1.01		-0.03		-0.32	

Note. Bold indicates that credibility interval (CrI) does not include zero. Mean excludes substance use disorders (SUD) subgroups (i.e., based only on the 11 diagnostic groups). MDD = major depressive disorder; unipolar = broad diagnosis of unipolar depression; GAD = generalized anxiety disorder; PTSD = posttraumatic stress disorder; OCD = obsessive-compulsive disorder.

“Table 4. Average Effect Sizes Corrected for Unreliability of Personality Scales” ([Kotov, et al. 2010](#))

Common mental illnesses were strongly connected with personality (some effect sizes with Cohen's *d* > 2.0 when examining neuroticism and mental illness). All disorders were found to have a positive relationship with high neuroticism, low conscientiousness, and low extraversion ([Kotov, et al. 2010, p.808](#)).

#### Axis 2 disorders

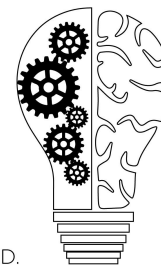
A meta-analysis examined the relationships between each trait of the Five-Factor model and each of the 10 DSM-IV personality diagnostic categories. They included paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive-compulsive categories. 12 studies published from 1990 to 1998 met the inclusion criteria. Small to medium effect sizes were found for axis II disorders ([Saulsman & Page, 2004](#)).



## Episode 099: The Big Five: Conscientiousness

### Part 2

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Table 5

Sample size weighted mean effect size estimates for each DSM-IV personality disorder and five-factor model personality dimension combination

DSM-IV personality disorders	Five-factor model personality dimensions				
	N	E	O	A	C
Paranoid	<b>.28****</b>	-.12****	-.04**	-.34****	-.07****
Schizoid	<b>.13****</b>	<b>.23****</b>	-.12****	-.17****	-.03*
Schizotypal	<b>.36****</b>	<b>.28****</b>	-.01	-.21****	-.13****
Antisocial	<b>.09****</b>	.04	.05**	-.35****	-.26****
Borderline	<b>.49****</b>	-.09****	.02	-.23****	-.23****
Histrionic	.02	<b>.42****</b>	.15****	-.06**	-.09***
Narcissistic	.04	<b>.20****</b>	.11****	-.27****	-.05*
Avoidant	<b>.48****</b>	-.44****	-.09****	-.11****	-.10****
Dependent	<b>.41****</b>	-.13****	-.11****	.05**	-.14****
Obsessive-Compulsive	<b>.08****</b>	-.12****	-.07****	-.04	<b>.23****</b>
Mean	.24	-.07	-.01	-.17	-.09
Median	.20	-.12	-.02	-.19	-.09

N = Neuroticism. E = Extraversion. O = Openness to experience. A = Agreeableness. C = Conscientiousness. Effect sizes  $\geq .20$  are in bold. The total number of participants on which sample size weighted mean effect sizes are based is 1158. The number of independent effect sizes on which means are based is 15.

\*  $P < .05$  (one-tailed).

\*\*  $P < .01$  (one-tailed).

\*\*\*  $P < .001$  (one-tailed).

\*\*\*\*  $P < .0001$  (one-tailed).

“Table 5. Sample size weighted mean effect size estimates for each DSM-IV personality disorder and five-factor model personality dimension combination” ([Saulsman & Page, 2004](#))

Disorders that are characterized by emotional distress had positive associations with neuroticism (paranoid ( $d = .28$ ,  $P < .01$ ), schizotypal ( $d = .36$ ,  $P < .01$ ), borderline ( $d = .49$ ,  $P < .01$ ), avoidant ( $d = .48$ ,  $P < .01$ ), and dependent ( $d = .41$ ,  $P < .01$ ). Neuroticism and agreeableness were the most prominent and consistent with their effect sizes across all the disorders. Disorders characterized by gregariousness (histrionic and narcissistic) had positive associations with extraversion. Disorders with interpersonal difficulties (paranoid, schizotypal, antisocial, borderline, and narcissistic) had negative associations with agreeableness. Disorders with orderliness (obsessive-compulsive) had positive associations with conscientiousness, while disorders with recklessness (borderline and antisocial) had negative associations with conscientiousness ([Saulsman & Page, 2004](#)).

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#### *Substance abuse*

A study from 2004 gives insight into the relationship between conscientiousness and substance abuse. Impulsive people tend to be low in conscientiousness and association has been seen with impulsivity and heavy substance use. “There seems to be a linear relationship between substance use and both conscientiousness and openness, as abstainers score comparatively high on conscientiousness and low on openness, unlike heavy users” ([Walton, 2004, p.518](#)).

Participants in this study were undergraduate students at a large Midwestern university enrolled in an introductory psychology course. They directly compared heavy users to abstainers and moderate users. “The findings were consistent with the argument that there is a linear relationship between substance use and psychological distress. Heavy users scored lower than abstainers on measures of conscientiousness  $t(72)= 4.18, p<.001$ , and its constituent facets of cautiousness,  $t(72)= 4.52, p<.001$ , dutifulness,  $t(72)= 4.53, p<.001$ , and perfectionism,  $t(71)= 2.47, p<.05$ . Compared to moderate users, heavy users scored lower on conscientiousness than moderate users,  $t(72)= 2.57, p<.05$ , cautiousness,  $t(72)= 2.96, p<.01$ , dutifulness,  $t(72)=2.49, p<.05$ , and perfectionism,  $t(72)=2.15, p<.05$ . Heavy users scored higher than abstainers on Barratt’s Impulsivity Scale (BIS),  $t(70)= 3.46, p<.01$ ” ([Walton, 2004, p.522](#)).

Descriptive statistics,  $F$  tests, and regression coefficients for categories of alcohol use

Trait	Abstainers	Moderate users	Heavy users	$F$	$\beta_{\text{linear}}$	$\beta_{\text{curvilinear}}$
Extraversion	2.70 (.80)	3.39 (.70) <sup>a</sup>	3.63 (.68) <sup>a</sup>	<b>17.21</b>	<b>.22</b>	-.12
Agreeableness	4.34 (.54)	4.09 (.55)	4.06 (.69) <sup>a</sup>	2.72	<b>-.25</b>	.11
Conscientiousness	3.80 (.58)	3.59 (.45)	3.26 (.62) <sup>a,b</sup>	<b>8.77</b>	<b>-.32</b>	.04
Dutifulness	4.08 (.57)	3.83 (.44) <sup>a</sup>	3.52 (.57) <sup>a,b</sup>	<b>10.30</b>	<b>-.39</b>	.08
Perfectionism	3.48 (.54)	3.43 (.62)	3.11 (.76) <sup>a,b</sup>	<b>3.44</b>	<b>-.34</b>	.18
Cautiousness	2.84 (.59)	2.64 (.55)	2.27 (.45) <sup>a,b</sup>	<b>10.31</b>	<b>-.26</b>	-.08
Emotional Stability	3.37 (.64)	3.08 (.63) <sup>a</sup>	3.12 (.65)	2.40	-.04	-.05
Intellect	3.85 (.58)	3.90 (.57)	3.73 (.58)	.77	-.14	-.02
Barratt Impulsivity Scale	2.46 (.42)	2.64 (.40)	2.83 (.54) <sup>a</sup>	<b>6.03</b>	<b>.26</b>	.13
FMPS	3.05 (.47)	3.00 (.52)	3.06 (.50)	.18	.01	-.06

Values in bold indicate  $p < .05$ .  $N = 118$  for the AB5C, 114 for the FMPS, and 115 for the BIS.  $\beta_{\text{linear}}$ , regression coefficient for linear term;  $\beta_{\text{curvilinear}}$ , regression coefficient for quadratic term; and FMPS, Frost Multidimensional Perfectionism Scale.

<sup>a</sup> Differs significantly from abstainers.

<sup>b</sup> Differs significantly from moderate users.

“Table 1. Descriptive statistics,  $F$  tests, and regression coefficients for categories of alcohol use” ([Walton, 2004](#))

#### *Antisocial and criminal behavior*

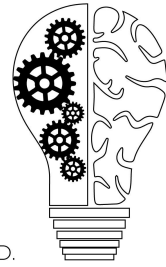
Low conscientiousness has been associated with antisocial behavior, lack of constraint, behavior problems in adolescence, and substance abuse ([Ozer, 2006](#)).



## Episode 099: The Big Five: Conscientiousness

### Part 2

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#### Links to ADHD

Out of the Big Five personality domains, conscientiousness had the largest correlation with attention problems, with participants scoring lower in conscientiousness having more attention problems. The correlation of  $-.58$  was seen with self-reported conscientiousness and  $-.40$  for spouse-reported conscientiousness (Nigg, 2002).

*Mean Correlations Between Wender–Stein ADHD Scales and Big Five Self- and Spouse Ratings Across All Six Samples (Weighted by Sample Size)*

Wender scales	Big Five reporter	Big Five Scales				
		E	A	C	N	O
“ADHD Total”	Self	-.20	<b>-.41</b>	<b>-.38</b>	<b>.47</b>	-.10
	Spouse	-.05	<b>-.21</b>	<b>-.25</b>	<b>.33</b>	.01
Social Problems	Self	<b>-.41</b>	-.07	-.19	.30	.04
	Spouse	<b>-.30</b>	-.06	-.26	.24	-.04
Conduct-Impulsivity	Self	-.03	<b>-.45</b>	-.19	.17	.09
	Spouse	.09	<b>-.22</b>	-.04	.18	.00
Attention Problems	Self	-.13	-.25	<b>-.58</b>	.34	.15
	Spouse	-.03	-.03	<b>-.40</b>	.18	.01
Negative Affect	Self	-.25	-.34	-.26	<b>.49</b>	.08
	Spouse	-.15	-.22	-.19	<b>.34</b>	.02
Learning Problems	Self	-.08	-.08	-.14	.15	<b>-.13</b>
	Spouse	-.10	.04	-.09	.10	<b>-.11</b>

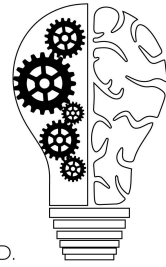
*Note.* Predicted correlations are set in bold. “ADHD Total” refers to the Ward et al. (1993) 25-item total score. Results were essentially the same with the 61-item total score. The Big Five measures and data sources are described in the text. All self-report correlations larger than absolute value of  $r = .064$  are significant at  $p < .01$ . Spouse correlations larger than absolute value of  $r = .138$  are significant at  $p < .01$ . ADHD = attention-deficit/hyperactivity disorder; Wender = Wender-Utah Rating Scale; E = Extraversion; A = Agreeableness; C = Conscientiousness; N = Neuroticism; O = Openness to Experience.

“Table 2. Mean Correlations Between Wender-Stein ADHD Scales and Big Five Self- and Spouse Ratings Across All Six Samples (Weighted by Sample Size)” (Nigg, 2002)

## Episode 099: The Big Five: Conscientiousness

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## High and low conscientiousness in therapy

### Working with a high conscientiousness patient

- Respect the patient's time and schedule.
- Communicate thoughts directly.
- Share appreciation for the patient's considerate and hard-working attitude.
- Therapy works better because patients are likely to make an effort, tolerate discomfort, and delay impulses and desires.
- A key problem of these patients may be being overworked.
- Those with higher conscientiousness are more likely to attend their therapy sessions and take their medications as prescribed.

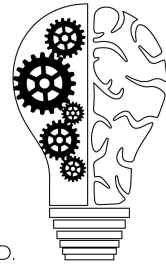
### Working with a low conscientiousness patient

- These patients are more likely to become discouraged or frustrated with therapy that requires hard work.
- These patients may be less likely to be successful in their career but they are not less likely to desire success.
- CBT may be more difficult due to a lack of engagement with homework
- Those with lower conscientiousness may need help setting up structures for taking their medications, and plans of action if doses are missed to make up for inconsistency.
- "CRT could be used to enhance cognitive functions, such as executive function, that subserves conscientiousness" ([Javaras, 2019, p.6](#)).
- Patients may appear resistant to therapy.
- Roll with resistance without being judgmental if they don't get it right away.
- Have realistic but hopeful expectations. In this study of 119 patients over 2 years "conscientiousness was significantly correlated with a good outcome,  $r = .35$ " ([Miller, 1991, p. 431](#)). But, this is not a death sentence to therapy failing.
- Consider a program with more structure in order to keep them engaged
  - Understand that the beginning will be difficult, but forming positive relationships with others in groups will be helpful for them.
  - Group therapy may be a good option for people low in conscientiousness. Once they meet friends and begin to feel like they're part of the group, it can carry them

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through a lot of their treatment. They begin to get the benefits of therapy in a controlled environment. Get them to stay in the program for the first week or two, and they will usually stay plugged in until the end. The question then is whether or not their conscientiousness improves over time.

- Find their underlying driving forces, and get them to talk about what they actually care about over and over again (motivational interviewing).
- Through behavioral therapy, they can make changes to their conscientiousness score, for example making small steps like being on time for meetings ([McAdams, et al. 2018](#))
- It's hard to get people with lower conscientiousness to exercise. You may need to access other pleasure centers that are not as structured, such as surfing or getting together with friends for some physical activity. It can be fun at times to work with someone who is very motivated, but there are people that are lower in conscientiousness who desire change, and I'll help them access a driving force based on what is already a natural drive in their lives.

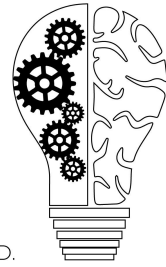
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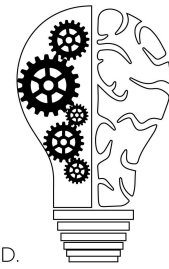
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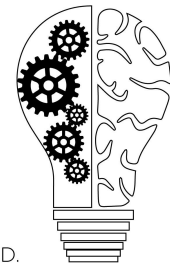
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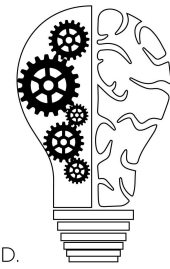
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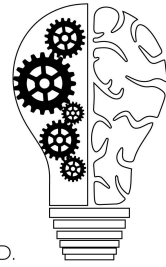
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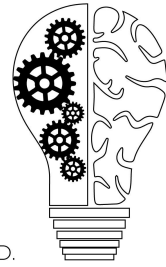
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