The Hateful Eight (H8):
An Efficient Multifaceted Approach to the Short Dark Tetrad (SD4)

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Abstract

Using the 28 items of the Short Dark Tetrad (SD4; Paulhus et al., in press), we developed an alternative 16-item version with eight facets called the Hateful Eight (H8). Over 450 undergraduate participants completed the SD4 and two sexual behavior items. We split the sample into exploratory and confirmatory halves. Exploratory factor analyses showed that each SD4 trait—Machiavellianism, narcissism, psychopathy, and sadism—had a two-factor model that fit significantly better than a one-factor model. Taking the two highest-loading items from each factor for each trait yielded eight facets, which we labeled deviousness and scheming (Machiavellianism); leadership and exceptionalism (narcissism); defiance and recklessness (psychopathy); and violent voyeurism and verbal abuse (sadism). Confirmatory factor analysis using both split-half and whole samples supported both an eight-factor/facet solution and hierarchical models in which the eight facets loaded onto the four Dark Tetrad traits, which in turn loaded onto a global Dark Tetrad factor. Participant sex interacted with the H8 composite score in predicting number of sex partners; men showed stronger H8–sex-partners slopes than women. Showing the utility of the H8’s hierarchical, multifaceted structure, this H8-by-sex interaction effect was driven by its narcissism trait, which was in turn driven by its exceptionalism facet.

Keywords: Dark Triad; Dark Tetrad; Measurement; Facets; Narcissism; Machiavellianism; Psychopathy; Sadism

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Dark Triad and Tetrad

The Dark Triad—Machiavellianism, narcissism, and psychopathy—are a suite of related-yet-separate personality traits reflecting disagreeable or socially undesirable dispositions in normal (sub-clinical) populations (Paulhus & Williams, 2002; Furnham et al., 2013). Over the past decade, some researchers have added everyday sadism as a fourth dark personality trait resulting in a Dark Tetrad (Buckels et al., 2013, Zeigler-Hill & Markus, 2019). The Dark Triad and Tetrad traits correlate with a host of behaviors, including decreased empathy (Turner et al., 2019), increased aggression (Jonason & Webster, 2010; Jones & Paulhus, 2010; Paulhus et al., 2018; Webster et al., 2016), and increased risky and impulsive behavior (Crysel et al., 2013), especially risky and promiscuous sexual activity and motivations among men (Jonason et al., 2009; March et al., 2017; McDonald et al., 2012; Smith et al., 2019; Zeigler-Hill et al., 2016).

Measuring the Dark Triad and Tetrad has evolved over time (Zeigler-Hill & Markus, 2019) from lengthy separate measures with heterogeneous response formats to using unified measures with standardized response formats. The 12-item Dirty Dozen (DD; Jonason & Webster, 2010; Webster & Jonason, 2013) was the first attempt at a brief unified measure of the Dark Triad traits (4 items per trait). Although the DD can provide an efficient measure of the Dark Triad in situations that demand brevity (e.g., experience-sampling studies), it has been rightly criticized by some researchers because its four-item traits can be limited in their ability to detect the breadth and multifaceted structure of Dark Triad traits (Maples et al., 2014; Miller et al., 2010, 2012). With nine items per trait, the 27-item Short Dark Triad (SD3; Jones & Paulhus, 2014) represented

a substantial improvement over the DD, trading less efficiency for more breadth; however, intended as a brief measure of three one-dimensional traits, the SD3 cannot reflect the multifaceted nature of some Dark Triad traits (Maples et al., 2014; Miller et al., 2010). Moreover, the SD4's psychopathy and Machiavellianism subscales are often too highly correlated (Vize et al., 2018).

Recently, the SD3 has been revised and expanded to encompass everyday sadism in the 28-item Short Dark Tetrad (SD4; Paulhus et al., in press), which assesses each trait with 7 items. Across three studies using, scores from the SD4 showed convincing evidence of their validity and reliability. In our opinion, the SD4 is presently the gold standard, state-of-the-art measure of the Dark Tetrad. Nevertheless, with 28 items, it may be too cumbersome to administer in situations that require fewer items or place premiums on respondents' time (e.g., experience-sampling and longitudinal studies). Another potential limitation of all prior unified Dark Triad measures—DD, SD3, and SD4—is that none allows for the likely multidimensional nature of each trait, which could be assessed using a hierarchical multifaceted framework (Costa & McCrae, 1995; DeYoung et al., 2007).

Personality Traits and Facets

Broad personality traits can be unpacked into facets, which reflect narrower and more specific sets of attributes or characteristics (Costa & McCrae, 1995). For example, agreeableness contains the facets of trust, compassion, and respectfulness (Soto & John, 2007), whereas self-esteem contains the facets of social, appearance, and performance (Webster et al., 2020). In a sense, this structure already exists within the Dark Triad and Tetrad, which is sometimes conceived of as a global dark personality trait with three or four facets (Moshagen et al., 2018). But because each Dark Tetrad traits themselves may

contain multiple facets (Miller et al., 2010, 2012), a *multifaceted* unified measure of the Dark Tetrad may be warranted. Thus, the Dark Tetrad can be conceived of as a three-level nested hierarchy of one global trait (Dark Personality), four mid-level traits (the Dark Tetrad), and at least two facets per trait (8 total facets).

Overview and Objectives

We sought to provide researchers with an alternative approach to the SD4 that maximizes both efficiency and flexibility while minimizing loss of meaningful trait breadth and information. Using a series of exploratory and confirmatory factor analyses, item response theory models, and validity correlations, we developed and examined the efficacy of a 16-item, facet-based, hierarchical version of the SD4 called the Hateful Eight (8H). Using multiple regressions, we also expected stronger slopes for men than women linking global Dark Tetrad score to numbers of reported sex partners (Jonason et al., 2009); however, we remained agnostic regarding which trait or facet might drive this predicted interaction effect.

Method

Participants and Procedure

Participants were 451 introductory psychology students at a large public university in the southeastern United States (188 men, 260 women, 1 non-binary, 1 transgender, 1 other). Although we neglected to collect age data, prior data from the same population showed that most participants (>95%) were between 18 and 23 years old. Regarding race and ethnicity, 260 students were White/European American/Caucasian (non-Hispanic/Latinx), 60 were Hispanic/Latinx (non-White), 45 were Asian American, 24 were Hispanic/Latinx (White), 22 were Black/African American, and the remaining 40 were from other races, ethnicities, or combinations of

these. Participants completed all measures online as part of a larger mass-testing exercise that all introductory psychology students are encouraged to complete, and they received research credit for participating. For some analyses, we randomly split the data set into exploratory ($n = 226$) and confirmatory ($n = 225$) samples. These samples provided ample power ($\geq .85$) to detect small-to-moderate effect sizes ($r_s \leq .20$).

Measures

Dark Tetrad

Participants completed the 28-item Short Dark Tetrad (SD4; Paulhus, Buckels, Trapnell, & Jones, 2019; Table 1) using response scales of 1 (*Disagree strongly*), 2 (*Disagree slightly*), 3 (*Neutral*), 4 (*Agree slightly*), and 5 (*Agree strongly*).

Sexual Behavior

We assessed participants' sexual behavior using two items related to behavioral sociosexuality (e.g., Webster & Bryan, 2007): "In your lifetime, how many different sexual partners have you had?" and "In your lifetime, how many difference casual-sex partners have you had?" Because of constraints placed on the mass-testing response format, response options were limited to seven categories for both questions: 1 (*0 partners*), 2 (*1–3*), 3 (*4–6*), 4 (*7–9*), 5 (*10–12*), 6 (*13–15*), and 7 (*16+ partners*). Because responses to both items were positively skewed (0.85 and 1.61, respectively), we log-transformed them (i.e., $\ln(x+1)$), which reduced the skew (0.28 and 0.92). Because log numbers of partners (i.e., total and casual) were positively correlated ($r = .57$, $\alpha = .72$), we first standardized (z-scored) each variable and averaged them to form a composite variable called sex partners ($n = 241$, $M = 0.02$, $SD = 0.90$). All data and code files appear here: https://osf.io/e57y4/?view_only=f68cbaac1d06481d9aed5558292f260f

Results

Exploratory Factor Analyses and Item Selection

Using the exploratory sample ($n = 226$), we ran four exploratory factor analyses (EFAs)—one for each of the SD4's seven-item traits using Mplus 6 (Muthén & Muthén, 1998–2011). For each EFA, we requested one- and two-factor solutions (maximum likelihood estimation with geomin rotation). The two-factor EFAs fit the data significantly better than one-factor models for all four traits ($\Delta\chi^2(6)s > 14.0$, $ps \leq .029$; see Electronic Supplementary Materials [ESM], Table S1, top half). Regarding the two-factor EFAs, fit statistics were mixed for two-factor Machiavellianism (e.g., RMSEA = .112; SRMR = .046), but good for the other three traits (e.g., RMSEAs $\leq .032$; SRMRs $\leq .018$). Factor loading for all two-factor EFAs appear in Table 1. We selected the two highest-loading items within each factor to create our new 16-item measure, the Hateful Eight (H8). Based on these 16 selected items, we labeled the eight 2-item factors as *deviousness* and *scheming* (Machiavellianism); *leadership* and *exceptionalism* (narcissism); *defiance* and *recklessness* (psychopathy); and *violent voyeurism* and *verbal abuse* (sadism; Table 1).

Confirmatory Factor Analyses

Using the H8's 16 items, we next tested a series of confirmatory factor analyses in Mplus 6 (Muthén & Muthén, 1998–2011; maximum likelihood estimation with geomin rotation) using the exploratory ($n = 226$), confirmatory ($n = 225$), and whole ($N = 451$) data sets (EMS Table S1, bottom half). Specifically, in each sample, we tested five models: (a) 1-factor (global Dark Tetrad), (b) 4-factor (Dark Tetrad traits), (c) 1-4-8 hierarchical model (1 global factor $\rightarrow$ 4 traits $\rightarrow$ 8 facets), (d) 4-8 hierarchical model (4 traits $\rightarrow$ 8 facets), and (e) 8-factor model (H8 facets; Figure 1). Fit statistics for all models appear in EMS Table S1, bottom half. Both the 1- and 4-factor models fit the

data poorly in all three samples and are not discussed further. In contrast, the other three 8-factor-based models all fit the data reasonably well in all three samples (e.g., RMSEAs = .053–.071, SRMRs = .049–.071).

Regarding model comparisons, in none of the three samples was there a significant difference between the 1-4-8 and the 4-8 hierarchical models ($\Delta\chi^2(2)s < 1.5$, $ps \geq .475$). In contrast, in all three samples, the 8-factor model fit the data at least marginally better than the 1-4-8 hierarchical model ($\Delta\chi^2(16)s = 24.4$ – 26.7 , $ps = .045$ – $.080$) and the 4-8 hierarchical model ($\Delta\chi^2(14)s = 24.1$ – 25.2 , $ps = .033$ – $.045$). Thus, although the 8-factor model had the best fit (Figure 1; see EMS Table S2 for correlations among factors), both hierarchical models produced nearly as good fits, suggesting that the H8's 16 items can be scored as eight facets, four traits, or as a global Dark Tetrad composite.

Item Response Theory: Information Efficiency

We also used item response theory (IRT; Morizot, Ainsworth, & Reise, 2007) to examine the extent to which the items chosen for the 16-item H8 were more efficient than those of the 28-item SD4 regarding per-item information. Using Mplus 6 (Muthén & Muthén, 1998–2011), we ran four graded response models (GRMs; Samejima, 2016)—one for each seven-item Dark Tetrad trait—to examine the discrimination (α) and difficulty (β) parameters for each item, and to generate scale-based information curves. In IRT, *discrimination* describes a given item's ability to differentiate among people with equivalent levels of the same latent trait. Higher item discrimination parameters (α s) are preferred and help maximize information. Item *difficulty* describes the necessary amount of the latent trait to have a .5 probability of endorsing an item at each

response threshold (e.g., $1 \rightarrow 2$, $2 \rightarrow 3$, $3 \rightarrow 4$, $4 \rightarrow 5$). Thus, there are $k-1$ difficulty parameters, where k is the number of response categories (e.g., a 5-point Likert scale produces 4 β s). Finally, *information* relates to the amount of precision-of-measurement reliability, which varies across levels of the latent trait (θ), and is often greater near the middle of the trait than at either end. The resulting discrimination (α) and difficulty (β) parameters for each Dark Tetrad trait appear in Table 1. The 16 items selected for the H8 often had among the highest discrimination parameters for each trait (mean α s = .90 vs. .76 for the 12 unselected items), and also displayed considerable breadth across the latent trait (θ) regarding their difficulty parameters (β s).

We ran another four GRMs on the H8's four-item Dark Tetrad traits to generate scale information curves. We then plotted these information curves with those from the SD4's seven-item Dark Tetrad traits, adjusting for differences in the numbers of items (which relates positively to information). The resulting eight information-per-item curves appear in Figure 2. We then calculated the area under the curve (AUC) for each scale information curve. AUC comparisons between the respective 7- and 4-item scales showed improved information per item efficiencies of 16% for Machiavellianism (1.77 vs. 2.04), 6% for narcissism (2.51 vs. 2.66), 15% for psychopathy (2.19 vs. 2.52), and 2% for sadism (2.56 vs. 2.60). Thus, supporting the H8's efficiency (vs. the SD4), per-item information improved by 10% on average across the Dark Tetrad traits.

Validity Correlations

Descriptive statistics for—and zero-order correlations among—the H8 composite, its four trait measures, and its eight facets for the whole sample ($N = 451$) appear in EMS Table S3. Following recommended procedures (Eisinga et al., 2013), we used

standardized Cronbach's alphas for all two-item scales. Recall that Cronbach's alpha is a function of the mean inter-item correlation (MIC) and the number of scale items.

Consequently, holding the MIC constant, scales with fewer items will always have lower alphas (Cortina, 1993). To this end, we report both MIC and Cronbach's alpha in EMS Table S3. The 16-item H8 composite score was reliable ($\alpha = .73$, MIC = .14) and correlated significantly with each of its four constituent traits and eight facets ($r_s = .35$ to .76). The four Dark Tetrad trait scores had acceptable reliability for four-item scales ($\alpha_s = .55$ to .70, MICs = .23 to .37). And the H8 facet scores showed acceptable reliability for two-item scales ($\alpha_s = .37$ to .69, MICs = .23 to .52). Although an alpha of .37 may seem low, it is consistent with published alphas from other two-item scales (e.g., $\alpha = .38$ for the TIPI's [Gosling et al., 2003] 2-item agreeableness scale; Romero et al., 2012). Indeed, two-item scales that strive for content breadth should, by definition, have relatively low alphas (see Gosling's 2020 note on the TIPI). And although an MIC of .23 yields an alpha of .37 for a two-item scale, it would yield an alpha of .89 for a 28-item scale such as the SD4.

We next examined convergent validity correlations involving the H8's composite score and its four-item trait measures using the whole sample ($N = 451$). First, we examined how well the H8's traits correlated with its respective seven-item measures from the SD4. Correlations ranged from .90 to .94 for the four Dark Tetrad traits, and the two composite scores correlated .95 ($p_s < .001$; EMS Table S4, boldfaced correlations). Second, we examined the same correlations after removing shared or common items between scales (i.e., correlations without criterion contamination). Correlations ranged from .42 to .70 for the four Dark Tetrad traits, and the two

composite scores correlated .76 ($ps < .001$; EMS Table S4, boldfaced italics correlations). Third, we examined correlations between the H8 traits and the two log-transformed sex partner items. Correlations for total and casual sex partners were significantly positive ($ps \leq .001$) for narcissism (.19, .16), psychopathy (.24, .21), sadism (.16, .14), and the H8 composite (.26, .21), but not for Machiavellianism (.07, .00).

Sex Partner Regressions

Regressing the standardized, log-transformed, two-item sex partner variable onto the Hateful Eight composite score showed a significant positive relation ($b = 0.457$, $t(414) = 5.40$, $p < .001$, $r_p = .26$, 95% CI [.16, .34]). Expanding this model to test the predicted participants-sex-by-global-Dark-Tetrad interaction showed significant effects for the global Dark Tetrad ($b = 0.626$, $t(412) = 6.64$, $p < .001$, $r_p = .31$ [.22, .40]), sex ($b = -0.296$, $t(412) = -3.14$, $p = .002$, $r_p = -.15$ [-.25, .06]), and their interaction ($b = 0.520$, $t(412) = 2.75$, $p = .006$, $r_p = .13$ [.04, .23]; EMS Figure S1, top). Simple effects tests showed a significantly stronger positive relation between sex partners and the H8 composite for men ($b = 0.886$, $t(412) = 8.51$, $p = .001$, $r_p = .28$ [.18, .36]) than for women ($b = 0.366$, $t(412) = 3.29$, $p = .006$, $r_p = .16$ [.06, .25]).

Regressing sex partners onto the Dark Tetrad traits showed significant positive relations for narcissism and psychopathy (EMS Table S5, Model 1). Expanding this model to test the predicted participant-sex-by-trait interactions showed significant effects for narcissism, psychopathy, sadism, participant sex, and crucially, the participant-sex-by-narcissism interaction ($b = 0.327$, $t(406) = 2.91$, $p = .004$, $r_p = .14$ [.05, .24]; EMS Table S5, Model 2; EMS Figure S1, middle). Simple effects tests showed a significantly stronger positive relation between sex partners and narcissism for men (b

= 0.354, $t(406) = 4.12$, $p < .001$, $r_p = .20$ [.11, .29]) than for women ($b = 0.027$, $t(406) = 0.38$, $p = .706$, $r_p = .02$ [-.08, .12]).

Regressing sex partners onto the eight Dark Tetrad facets (i.e., the H8) showed significant positive relations for recklessness and verbal abuse (EMS Table S6, Model 1; EMS Figure S1, bottom). Expanding this model to test the predicted participant-sex-by-facet interactions showed significant effects for exceptionalism, recklessness, verbal abuse, participant sex, and crucially, the participant-sex-by-exceptionalism interaction ($b = 0.268$, $t(397) = 2.75$, $p = .006$, $r_p = .14$ [.04, .23]; EMS Table S6, Model 2). Simple effects tests showed a significantly stronger positive relation between sex partners and exceptionalism for men ($b = 0.257$, $t(397) = 3.43$, $p < .001$, $r_p = .17$ [.07, .26]) than for women ($b = -0.012$, $t(397) = -0.18$, $p = .854$, $r_p = -.01$ [-.11, .09]).

Discussion

The findings presented above support the H8's efficacy as an efficient and flexible measure of dark personality overall, the Dark Tetrad traits, and eight distinct-yet-related dark personality facets. The nested, hierarchical structure of the H8 gives researchers the flexibility to make either broad or highly specific predictions based on their chosen theory, and can provide greater diagnostic clarity regarding which facet or facets may be driving a trait-level effect. Because interest in facets appears to be increasing in personality psychology, we believe that the H8 is well positioned to meet researchers' needs, especially in settings that demand item efficiency.

Limitations and Implications

Although we believe that the H8 provides a novel and valuable alternative approach to the SD4, it shares the same limitations as any brief measure (Credé, 2012), including a lack of trait breadth and comparatively lower reliability estimates, as we

discussed above. We again stress that the SD4 is and should continue to be the go-to Dark Tetrad measure for most research projects, especially those that focus solely on the Dark Tetrad traits. Nevertheless, in settings that demand either brevity or a facet-level approach, the H8 should be considered as a viable alternative. Moreover, both the SD4 and H8 share the same limitations as most self-report measures regarding acquiescence bias and socially desirable responding (Paulhus & Vazire, 2007).

Conclusions

We developed and evaluated a 16-item version of the 28-item SD4 that we call the Hateful Eight (H8) because it can be scored as eight dark personality facets nested within the four Dark Tetrad traits: deviousness and scheming (Machiavellianism); leadership and exceptionalism (narcissism); defiance and recklessness (psychopathy); and violent voyeurism and verbal abuse (sadism). In addition to being a more efficient measure that can be used in settings that place premiums on items or time, the H8's hierarchical structure of facets nested within traits makes it a flexible new alternative approach to the SD4's structure and item set. We hope that the H8 will spur researchers to consider examining the causes, correlates, and consequences of the Dark Tetrad traits at the facet level.

Electronic Supplementary Materials

ESM 1: Tables S1–S6 and Figure S1:

https://osf.io/e57y4/?view_only=f68cbaac1d06481d9aed5558292f26of

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Figure 1

Figure 1. Confirmatory factor analysis results for whole sample: Eight-factor model.

Figure 2

Figure 2. Scale information per item curves for the Short Dark Triad (7-item) and Hateful Eight (4-item) traits.

Table 1. Short Dark Tetrad Items, Their Hateful Eight Facets, Exploratory Factor Analysis (EFA) Results, and Item Response Theory (IRT) Model Results

Short Dark Tetrad items by trait		Hateful 8 facet	EFA factors		IRT results				
			1	2	α	β_1	β_1	β_1	β_1
Machiavellianism									
1.	It's not wise to let people know your secrets.		.33	.11	0.40	-5.50	-2.95	-1.01	2.06
2.	Whatever it takes, you must get the important people on your side.		.34	.21	0.58	-3.51	-1.53	0.08	2.48
3.	Avoid direct conflict with others because they may be useful in the future.	Deviousness	.68	-.00	0.85	-2.10	-0.75	0.03	2.08
4.	Keep a low profile if you want to get your way.	Deviousness	.56	-.00	0.80	-1.89	-0.30	0.74	2.75
5.	Manipulating the situation takes planning.	Scheming	-.02	.64	0.46	-4.85	-2.48	-0.52	2.08
6.	Flattery is a good way to get people on your side.		.26	.39	0.54	-4.40	-1.95	-0.40	2.53
7.	I love it when a tricky plan succeeds.	Scheming	.21	.47	0.50	-3.58	-1.98	-0.42	1.48
Narcissism									
1.	People see me as a natural leader.	Leadership	.78	.01	0.87	-2.83	-1.31	-0.22	1.30
2.	I have a unique talent for persuading people.	Leadership	.77	-.06	0.69	-3.11	-1.25	0.07	1.93
3.	Group activities tend to be dull without me.		.45	.17	0.81	-2.05	-0.47	1.03	2.39
4.	I know that I am special because people keep telling me so.		.21	.42	0.81	-1.58	-0.34	1.02	2.75
5.	I have some exceptional qualities.	Exceptionalism	.12	.65	1.00	-2.80	-1.76	-0.58	1.09
6.	I'm likely to become a future star in some area.	Exceptionalism	-.00	.84	0.96	-1.36	-0.52	0.51	1.73
7.	I like to show off every now and then.		-.01	.60	0.68	-2.33	-1.34	-0.43	1.94
Psychopathy									
1.	People often say I'm out of control.	Defiance	.65	-.07	0.91	0.14	1.00	1.80	3.38
2.	I tend to fight against authorities and their rules.	Defiance	.72	.01	1.37	0.02	0.85	1.41	2.36
3.	I've been in more fights than most people of my age and gender.		.56	-.02	0.99	1.14	1.65	2.29	3.40
4.	I tend to dive in, then ask questions later.		.44	.04	0.58	-1.22	0.15	1.14	3.53
5.	I've been in trouble with the law.	Recklessness	.41	.19	0.92	1.34	1.77	2.19	3.87
6.	I sometimes get into dangerous situations.	Recklessness	.00	1.16	0.95	-0.09	0.74	1.22	2.76
7.	People who mess with me always regret it.		.38	.12	0.67	-0.54	0.55	1.77	3.67
Sadism									
1.	Watching a fist-fight excites me.		.58	.28	1.54	-0.01	0.47	0.94	1.93
2.	I really enjoy violent films and video games.	Violent Voyeurism	.90	-.12	1.61	-0.15	0.31	0.80	1.68
3.	It's funny when idiots fall flat on their face.		.50	.24	0.91	-0.75	0.01	0.58	1.85
4.	I enjoy watching violent sports.	Violent Voyeurism	.78	.01	1.64	-0.23	0.28	0.70	1.65
5.	Some people deserve to suffer.		.14	.49	0.56	-1.00	0.18	0.96	2.95
6.	Just for kicks, I've said mean things on social media.	Verbal Abuse	-.04	.56	0.45	1.77	2.56	3.78	6.47
7.	I know how to hurt someone with words alone.	Verbal Abuse	.01	.50	0.37	-2.21	-0.96	0.39	3.19

Note. Ns: EFA = 221, IRT = 451. α = IRT discrimination parameter. β_1 – β_1 = IRT difficulty parameter. Results for four separate EFAs, one per SD4 trait. Regarding Psychopathy Item 6, recall that standardized factor loadings can exceed 1.0 (see Jöreskog, 1999).

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