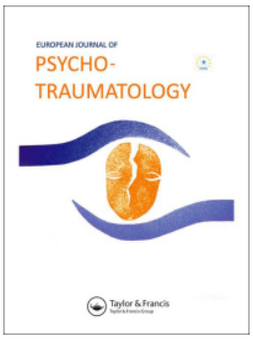

European Journal of Psychotraumatology

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/zept20

New findings questioning the construct validity of complex posttraumatic stress disorder (cPTSD): let's take a closer look

Julian D. Ford

To cite this article: Julian D. Ford (2020) New findings questioning the construct validity of complex posttraumatic stress disorder (cPTSD): let's take a closer look, European Journal of Psychotraumatology, 11:1, 1708145, DOI: 10.1080/20008198.2019.1708145

To link to this article: https://doi.org/10.1080/20008198.2019.1708145

Published online: 21 Jan 2020.

EUROPEAN JOURNAL OF PSYCHOTRAUMATOLOGY
2020, VOL. 11, 1708145
https://doi.org/10.1080/20008198.2019.1708145

EDITORIAL

OPEN ACCESS Check for updates

New findings questioning the construct validity of complex posttraumatic stress disorder (cPTSD): let's take a closer look

Julian D. Ford

Department of Psychiatry, University of Connecticut School of Medicine, Farmington, CT, USA

ABSTRACT

This commentary provides a broader context for interpreting evidence from Latent Class and Latent Profile analyses on complex posttraumatic stress disorder (CPTSD) that was provided in a recent contribution to the *European Journal of Psychotraumatology*. These data analytic strategies are not alone sufficient to test the construct validity of CPTSD. They base their conclusion on the empirical finding of substantial variation in latent models obtained with different analytic procedures and interpretations of the fit of different latent models, as well as interesting additional evidence of dispersion when individual patients' symptom counts and symptom severity scores on PTSD and CPTSD are examined. However, the results of their analyses actually do provide support for one feature of construct validity, demonstrating discriminant validity by showing a consistent differentiation between PTSD and CPTSD (with expectable variation in both PTSD and CPTSD severity level by persons). Even in a sample of patients diagnosed with PTSD, there may be a Disorders of Self Organization (DSO) sub-group with low PTSD symptom severity. More detailed examination of which DSO symptoms and sub-domains characterize the DSO sub-group and the CPTSD sub-group is needed in order to clarify the nature of the DSO/CPTSD construct. Other analyses needed to fully test construct validity also are described.

Nuevos hallazgos que cuestionan la validez de constructo del trastorno de estrés postraumático complejo (cPTSD): echemos un vistazo más de cerca

Este comentario proporciona un contexto más amplio para interpretar la evidencia de los análisis de Clase Latente y Perfil Latente sobre el trastorno de estrés postraumático complejo (TEPT-C) que fue proporcionado en una reciente contribución a la Revista Europea de Psicotraumatología. Estas estrategias analíticas de datos no son suficientes por sí solas para probar la validez de constructo del TEPT-C. Basan su conclusión en el hallazgo empírico de una variación sustancial en los modelos latentes obtenidos con diferentes procedimientos analíticos e interpretaciones del ajuste de los diferentes modelos latentes, así como en evidencia adicional interesante de dispersión cuando se examinan los recuentos de síntomas individuales y los puntajes de severidad de los síntomas para TEPT y TEPT-C. Sin embargo, los resultados de sus análisis en realidad proporcionan evidencia para una característica de validez de constructo, demostrando validez discriminante al mostrar una diferenciación consistente entre TEPT y TEPT-C (con una variación esperada tanto en el nivel de gravedad del TEPT como del TEPT-C por personas). Sin embargo, los resultados de sus análisis en realidad brindan soporte para una característica de la validez de constructo, lo que demuestra la validez discriminante al mostrar una diferenciación consistente entre el TEPT y el TEPTC (con una variación esperada tanto en el nivel de gravedad del TEPT como del TEPTC por personas). Incluso en una muestra de pacientes diagnosticados con TEPT, puede haber un subgrupo de Trastornos de la Organización del Sí Mismo (DSO) con baja gravedad de los síntomas de TEPT. Se necesita un examen más detallado de qué síntomas y subdominios de DSO caracterizan el subgrupo de DSO y el subgrupo de TEPT-C para aclarar la naturaleza del constructo de DSO / TEPT-C. También se describen otros análisis necesarios para probar completamente la validez de constructo.

新发现质疑复杂型创伤后应激障碍 (cPTSD) 的结构效度:详细分析

这篇评论是《欧洲创伤心理学期刊》的最新贡献，为理解复杂创伤后应激障碍（CPTSD）的潜在类别和潜在剖面分析提供了更广阔的背景。这些数据分析策略还不足以单独测试CPTSD的结构效度。他们的结论基于以下的实证事实：通过不同的分析程序获得的潜在模型的实质性差异，并对不同潜在模型的拟合度进行解释。他们还发现，当考虑到个别患者的症状数和PTSD和CPTSD的分数时，结果也是分散的。然而，他们的分析结果确实为结构效度的一个特征提供了支持：通过显示PTSD和CPTSD 之间的一致的区别(在个体水平上PTSD和CPTSD严重程度存在符合预期的差异) 来证明其判别效度。即使在被诊断为PTSD的患者样本中，也可能存在 PTSD症状严重程度较低的自我组织障碍(DSO) 亚组。为了进一步阐明DSO/

ARTICLE HISTORY
Received 5 December 2019
Revised 11 December 2019
Accepted 11 December 2019

KEYWORDS
PTSD; complex PTSD; disorders of self organization; construct validity

PALABRAS CLAVE
trastorno de estrés postraumático; trastorno de estrés postraumático complejo; validez de constructo; trastornos de la organización del sí mismo

关键词
创伤后应激障碍; 复杂型PTSD; 结构效度; 自我组织障碍

HIGHLIGHTS

- Demonstrating construct validity for complex PTSD (CPTSD) requires more evidence than can be provided by latent class (LCA) and latent profile (LPA) analyses alone.
- Variability in individual symptom levels for PTSD and CPTSD is expectable and does not constitute evidence of a lack of discriminant validity for either PTSD or CPTSD.
- Detailed examination of the symptoms characterizing classes or profiles for both PTSD and CPTSD is necessary in order to characterize and test the validity of both syndromes.

CONTACT Julian D. Ford jford@uchc.edu Department of Psychiatry, University of Connecticut Health Center, MC1410, 263 Farmington Ave., Farmington, CT 06030, USA

CPTSD结构的本质, 需要更详细地考察哪些DSO症状和子域构成了DSO亚组和CPTSD亚组的特征。文中还描述了完全检验结构效度所需的其他分析。

Complex posttraumatic stress disorder (cPTSD) has been the subject of controversy since it was first proposed almost three decades ago (Herman, 1992). In this commentary, I will concur with the conclusion of a recent study by Achterhof et al. (2019) that demonstrating construct validity for CPTSD requires more evidence than can be provided by latent class (LCA) and latent profile (LPA) analyses alone. However, I will challenge their assertion that their LCA and LPA results cast doubt on the construct validity of CPTSD, and suggest that instead their findings actually provide consistent evidence of distinct PTSD, CPTSD, and also Disorders of Self Organization (DSO) sub-groups even in a sample of patients diagnosed with PTSD. I also will suggest that variability in individual symptom levels for PTSD and CPTSD is expectable and does not constitute evidence of a lack of discriminant validity for either PTSD or CPTSD, and that more detailed examinations of the specific symptoms characterizing putative PTSD or CPTSD/DSO sub-groups and syndromes is necessary in order to accurately characterize and test the validity of PTSD and CPTSD.

Although it has been argued that cPTSD is unnecessary and better conceptualized as PTSD plus comorbidities or a variant of borderline personality disorder (Resick et al., 2012), a growing body of research (Ford, 2015; Olff et al., 2019) indicates that cPTSD 'is both conceptually and clinically useful [as a] distinct entity [that] is highly prevalent, across different cultures, in survivors of prolonged, repeated trauma' (Herman, 2012, p. 256). Indeed, a version of cPTSD that combines PTSD with Disorders of Self Organization (i.e. affect dysregulation, interpersonal detachment, negative self-concept) has been accepted in the 11th revision of the *International Classification of Diseases* (*ICD-11*) based on the growing empirical evidence base (Brewin et al., 2017).

A critical foundational question that extends beyond the decision whether to codify cPTSD as a psychiatric diagnosis is whether cPTSD has validity as a conceptual construct. Evidence of structural distinctiveness of cPTSD and PTSD in confirmatory factor analysis studies (Gilbar, Hyland, Cloitre, & Dekel, 2018; Karatzias et al., 2017; Shevlin et al., 2017), and of distinct sub-groups of trauma-exposed persons with specific symptom profiles consistent with cPTSD versus PTSD (Ben-Ezra et al., 2018; Karatzias et al., 2017, 2017) support the validity of the cPTSD construct.

However, other research has been reported that cogently 'raise[s] concerns about the distinctions between CPTSD and PTSD proposed for *ICD-11*' (Wolf et al., 2015, p. 215). Using a factor mixture model with two latent dimensional variables representing distinct structures of interrelationships among symptoms, and four latent classes representing sub-groups with distinct symptom profiles, with civilian and military samples, Wolf et al. (2015) found evidence that levels of symptom severity but not a differentiation of PTSD and cPTSD symptoms best accounted for derived sub-sets of both symptoms and individuals. More recently, with a sample of resettled adult refugees, subgroups were found with symptom profiles consistent with PTSD and with CPTSD, but also a subgroup with prominent affect dysregulation symptoms, as well as evidence of cumulative trauma exposure only for the PTSD and cPTSD classes (Liddell et al., 2019). In a United States adult community sample, cumulative trauma exposure in adulthood and specific adverse childhood events were associated with both PTSD and cPTSD, but cumulative childhood trauma exposure had a clear dose–response relationship with CPTSD but was associated with PTSD only at the highest cumulative exposure level – and to a much lesser degree than for CPTSD (i.e. with odds ratios of 2.6 vs. 21.9) (Cloitre et al., 2019). Further, persons who met criteria for cPTSD had more severe and extensive psychiatric symptoms and poorer well-being than those who met criteria only for PTSD or who met neither diagnostic criteria. Thus, whether cPTSD is the best construct to represent posttraumatic affect dysregulation, as well as whether cPTSD represents a sub-type of PTSD associated with high levels of cumulative trauma exposure rather than a distinct construct, remain in question.

In the midst of this rapidly evolving controversy, Achterhof et al. (2019) have reported a timely empirical examination of the construct validity of cPTSD in a sample of adult patients diagnosed with PTSD. Using both latent class (LCA) and latent profile (LPA) analytic procedures, sub-groups were identified with symptom profiles consistent with PTSD and cPTSD. However, the two syndromes did not have consistent symptom profiles due to variation in how individuals were classified and how the LCA and LPA model fit statistics were interpreted. In a two-class LCA, only symptom frequency across both PTSD and cPTSD symptoms distinguished the classes, consistent with Wolf et al. (2015). When a three-class LCA solution was accepted, a distinct PTSD class emerged, along with two other classes that differed primarily based on high versus moderate frequency of symptom endorsement across the full range of PTSD and cPTSD symptoms. In a four-class LPA

model, two classes represented, respectively, high and low symptom severity, again consistent with Wolf et al. (2015) but, as in the three-class LCA, a distinct PTSD class again emerged. A fourth class reflected high severity with the exception of low levels of PTSD intrusion symptoms. Overall, the findings are consistent with the *ICD-11* formulation, with one class characterized by high levels or severity of PTSD symptoms and another class characterized by high levels or severity of PTSD and cPTSD symptoms (Brewin et al., 2017).

Achterhof et al. (2019) also provided an informative additional graphic analysis on a person-specific basis, via scatterplots of counts (from the LCA) and cumulative severity (from the LPA) of PTSD and cPTSD symptoms. The LCA scatterplot shows a relatively good separation of the PTSD, cPTSD, and moderate symptom classes, but what is striking is that the moderate symptom class has generally high levels of cPTSD symptoms (i.e. 3 or more of a possible 5) and low levels of (i.e. 1–3) PTSD symptoms. On the LPA scatterplot, similarly, PTSD and cPTSD classes were relatively separate, but a moderate severity symptom class had relatively low/moderate cPTSD as well as PTSD symptoms, and the unexpected fourth class overlaps almost entirely with the cPTSD class. Achterhof et al. (2019) conclude that these results are 'inconsistent with the theory of separate PTSD vs. CPTSD cluster [and] clearly demonstrate that there are no natural well-separated clusters … at most show[ing] a gradual difference between the classes defined by the LPA.'

An alternative interpretation might be that the graphs depict a PTSD class and a cPTSD class as proposed, although each has a range of symptoms/severity from moderate to high and therefore it cannot be assumed that either PTSD or cPTSD involves uniformly high numbers or severity of class-specific symptoms. The fact that some members of those two classes were positioned close to the border of the other class does not call into question the validity of cPTSD as a construct any more than it calls into question the validity of PTSD. Both constructs are presumed to have variability on the level of individuals – not so much as the 636,120 variations that can occur in *DSM-5* PTSD (Galatzer-Levy & Bryant, 2013), but certainly not so much uniformity that persons could not be classified as meeting the criteria for the construct/diagnosis while having absolute symptom levels at the low or high end. The dispersion in symptom levels thus does not invalidate cPTSD (or PTSD) as a construct.

On the other hand, the additional classes in the three-class LCA and four-class LPA raise interesting questions, particularly when the scatterplot findings are considered. Overall, most PTSD scores were in the moderate to high range (as expected in a sample comprised of patients diagnosed with PTSD), but the third LCA class and fourth LPA class had numerous members with relatively low PTSD symptom count/severity (Cloitre et al. 2013). Members of those classes had generally moderate to high cPTSD symptom counts (i.e. 3–5 of 5 possible) and moderate cPTSD symptom severity (i.e. approximately 15 on a 5–25 scale). Could this class represent a Disorders of Self-Organization (DSO) sub-group with low PTSD symptoms and cPTSD/DSO symptoms that are clinically significant but generally not as extreme as those attributed to a disorder of particularly severe self/relational dysregulation such as borderline personality disorder (BPD; see below)? Or could this class represent a sub-group with prominent affect dysregulation but no major problems in relationships of sense of self, similar to a class found in a study with re-settled adult refugees that was characterized by severe affect dysregulation and current life stressors (i.e. residential insecurity) but no other cPTSD or PTSD symptoms (Liddell et al., 2019)? Alternately, these classes could represent patients who are better characterized as experiencing impairing depression or anxiety, rather than DSO or cPTSD-related affect dysregulation (Gilbar, 2020).

A closer look at which DSO symptoms were present/severe for the members of those classes, as well as assessment of depression and anxiety symptoms that are not specifically trauma-related, would be necessary in order to determine how best to characterize them and their disorder(s). Indeed, they might best be characterized by a single DSO construct (with variability in symptom presence/severity), but alternatively, they might comprise several rather than only a single clinical syndrome(s) that could be trauma-related or -unrelated. This finer-grained examination is important in order to test the validity of the DSO component of cPTSD when it occurs in the absence of PTSD (Ford, 1999), as well as its potential variations and boundaries and discriminability from other psychiatric and behavioural disorders.

Then, there is the anomalous fourth LPA class, in which low levels of intrusive re-experiencing symptoms occurred in conjunction with high levels of all other PTSD and cPTSD symptoms. Does this class represent the *DSM-5* dissociative sub-type of PTSD (Lanius, Brand, Vermetten, Frewen, & Spiegel, 2012), with low levels of intrusive re-experiencing due to dissociative hypoaraousal and attenuation of reactivity to trauma cues and conscious awareness of trauma memories? Or a hyperarousal syndrome consistent with agitated depression or extreme anxiety (e.g. panic) (Gilbar, 2020)? Or a severe variant of borderline personality disorder with multiple forms of extreme biopsychosocial dysregulation that are associated with childhood-onset cumulative adversity

(Ford & Courtois, 2014)? Here too, examination of person-specific symptom profiles would be needed in order to determine whether this class represents one or several clinical constructs that may differ from or serve as variants of cPTSD – and thus to better define and determine the validity of cPTSD.

Fundamentally, construct validity requires evidence that cPTSD: (1) is associated with measures of integrally related constructs (e.g. affect dysregulation, relational problems, trauma-impacted self-concept (i.e. convergent validity); (2) is empirically distinguishable from not only PTSD but also other psychiatric syndromes (i.e. discriminant validity); and (3) has a replicable structure consistent with the proposed conceptual domains (i.e. internal consistency and structural validity). For example, a study replicating findings across the populations of adults in substance abuse treatment and incarcerated adults tested a progenitor of cPTSD, disorders of extreme stress not otherwise specified (DESNOS), and found replicated evidence of symptom factors that were internally consistent and showed evidence of convergent and discriminant validity (Scoboria, Ford, Lin, & Frisman, 2008). In that study, notably, some symptoms that had been proposed to belong in cPTSD were not included in the empirically derived factors (e.g. dissociation), and this began a winnowing and streamlining of cPTSD that has culminated in the *ICD-11* version. More recently, in a study with children in paediatric and mental health care in the United States, a variant of cPTSD ('developmental trauma disorder') has shown evidence of convergent validity and discriminant validity in relation to PTSD and both internalizing and externalizing disorders, as well as based on a pattern of traumatic antecedents specifically involving victimization and relational and/or attachment adversity (Ford, Spinazzola, van der Kolk, & Grasso, 2018; Spinazzola, van der Kolk, & Ford, 2018; van der Kolk, Ford, & Spinazzola, 2019).

A theory-informed and evidence-based approach to determining the nature and validity of all of the posttraumatic disorders could begin with the widely held and well supported view that PTSD is an adaptation to *existential threat* in which a preoccupation with threat-related cues (in the form of intrusive memories, hypervigilance) and corresponding attempts at harm avoidance (Colic et al., 2018) that is most likely to occur when traumatic experiences are recent and clearly recalled. By contrast, the additional cPTSD, symptoms that have been characterized as disorders of self organization (DSO) could be a posttraumatic adaptation to traumatic experiences involving *interpersonal betrayal* (Freyd, 1994) and the resultant affect dysregulation due to a sense of vulnerability in close relationships (Van Dijke, Hopman, & Ford, 2018) and an associated sense of shame (Lopez-Castro, Saraiya, Zumberg-Smith, & Dambreville, 2019) and damage to one's sense of self. This conceptualization might co-locate PTSD with disorders involving fear (e.g. panic, phobias), anxiety (e.g. generalized or social anxiety disorder), while placing cPTSD closer to disorders of dysregulation of emotion, consciousness, identity or self-control (e.g. dissociation disorders, depression, borderline personality disorder, and childhood externalizing or dysregulation disorders).

With this theoretical foundation, research could systematically test construct validity by examining whether PTSD and cPTSD are discriminable from closely aligned comorbid disorders. In a clinical adult sample, cPTSD was distinguished from PTSD by higher levels of dissociative, depression, self-harm, suicidality, and borderline personality disorder (BPD) symptoms (Hyland, Shevlin, Fyvie, & Karatzias, 2018). BPD has been hypothesized to involve enmeshment in labile relationships based on a fear of abandonment or rejection, in contrast to viewing cPTSD as involving fear of closeness and associated relational numbing and detachment (Ford & Courtois, 2014). Consistent with this view, a study with a trauma-exposed United Kingdom population sample found distinct PTSD, cPTSD, and BPD latent variables that were characterized, respectively, by (1) threat-related intrusive memories, avoidance, and hyperarousal (PTSD); (2) emotional numbing, a sense of self as damaged, and relational detachment (cPTSD); and, (3) emotional reactivity and disinhibition, terror of abandonment, and absence of a clear or sustained sense of self (BPD) (Hyland, Karatzias, Shevlin, & Cloitre, 2019). However, a structural equation modelling study with a Dutch clinical sample found that fear of both abandonment and closeness, and affect dysregulation, mediated the relationship between childhood trauma and both cPTSD and BPD – but what distinguished the disorders was mediation by different forms of dissociation: dissociative fragmentation and somatoform dissociation were mediators for cPTSD, while dissociative intrusions and rumination were mediators for BPD (Van Dijke et al., 2018).

Thus, complex interconnections appear to be involved both within and between the constructs and syndromes/diagnoses associated with posttraumatic adaptations. Network analysis or symptomics may provide important additional clarification of the nature and validity of posttraumatic symptom/adaptation constructs (Armour, Fried, & Olff, 2017). The PTSD symptoms of emotional and physiological reactivity to trauma cues and the cPTSD symptoms of emotional dysregulation (e.g. numbing, angry rumination) are consistently identified as having high centrality (i.e. many strong interconnections) in the symptom networks of a variety of trauma-exposed adult populations (Fried et al., 2018; Greene,

Gelkopf, Epskamp, & Fried, 2018; Moshier et al., 2018; Sullivan, Smith, Lewis, & Jones, 2018; von Stockert, Fried, Armour, & Pietrzak, 2018). Two network analysis studies have extended these findings by including symptoms of depression and anxiety disorders as well as PTSD and cPTSD. In a sample of men who have sex with men, PTSD and depression symptoms clustered relatively separately, but they also had overlapping symptoms (e.g. sleep and concentration problems, and only PTSD avoidance symptoms were associated with risky sexual behaviour (Choi, Batchelder, Ehlinger, Safren, & O'Cleirigh, 2017). In a sample of men who perpetrated domestic violence, Gilbar (2020) similarly found evidence of clustering of symptoms consistent with conceptual models of PTSD (except avoidance and hypervigilance were strongly interconnected and did not constitute separate sub-syndromes), depression, and anxiety – but the proposed cPTSD symptoms tended to be dispersed rather than representing a distinct syndrome or set of sub-syndromes. Relational problems and one of the emotion dysregulation symptoms (emotional numbing) clustered together and with the depression symptom of worthlessness, and the worthlessness symptom also was highly connected with cPTSD negative self-concept symptoms. The other cPTSD emotion dysregulation symptom (difficulty recovering from distress) clustered with both the anxiety and depression symptoms but was not connected to any other cPTSD (or PTSD) symptom.

Although these two network analyses studied specialized sub-populations of high-risk men, their findings are consistent with those of Achterhof et al. (2019) – suggesting that the symptoms currently being used to define cPTSD in the *ICD-11* may either require modification in order to constitute a distinct, cohesive, and valid construct – or may represent complex extensions of other disorders including not only PTSD but also depression, anxiety, and dysregulation disorders. Achterhof et al. (2019) have contributed to this quest by raising the question of cPTSD's construct validity, and by reminding us that clarifying methodological assumptions and examining individual variability in symptom presentation are crucial in tests of construct validity, when evaluating the meaning of empirically derived cross-individual classes, profiles, or symptom factor structures. Each new set of findings should always be looked at still more closely and deeply, so that we can gain incrementally greater clarity about our focal constructs rather than accepting any of them as fixed and final.

Of course, one can only find what one's instruments are able to make visible, so it also is important to recognize that the specific expressions of PTSD and cPTSD symptoms that we use in construct validity, diagnostic, epidemiologic, and treatment outcome studies may not yet represent the fullest or most accurate depiction of the construct we seek to measure – the adaptations, experience, and recovery of trauma survivors. The map is not the territory, and the maps our assessments provide may be psychometrically sound – yet we still must be careful to never substitute them for the existential truth of each trauma survivor.

Disclosure statement

Julian Ford is co-owner of Advanced Trauma Solutions, Inc., the sole licenced distributor of the TARGET model copyrighted by the University of Connecticut.

Funding

This work was supported by the Substance Abuse and Mental Health Services Administration [5U79SM080013].

ORCID

Julian D. Ford http://orcid.org/0000-0001-7923-0658

References

Achterhof, R., Huntjens, R. J. C., Meewisse, M., & Kiers, H. L. A. (2019). Assessing the application of latent class and latent profile analysis for evaluating the construct validity of complex posttraumatic stress disorder: Cautions and limitations. *European Journal of Psychotraumatology*, *10*(1), 1698223.

Armour, C., Fried, E. I., & Olff, M. (2017). PTSD symptomics: Network analyses in the field of psychotraumatology. *European Journal of Psychotraumatology*, *8*(sup3), 1398003.

Ben-Ezra, M., Karatzias, T., Hyland, P., Brewin, C. R., Cloitre, M., Bisson, J. I., … Shevlin, M. (2018). Posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD) as per ICD-11 proposals: A population study in Israel. *Depression and Anxiety*, *35*, 264–274.

Brewin, C. R., Cloitre, M., Hyland, P., Shevlin, M., Maercker, A., Bryant, R. A., … Reed, G. M. (2017). A review of current evidence regarding the ICD-11 proposals for diagnosing PTSD and complex PTSD. *Clinical Psychology Review*, *58*, 1–15.

Choi, K. W., Batchelder, A. W., Ehlinger, P. P., Safren, S. A., & O'Cleirigh, C. (2017). Applying network analysis to psychological comorbidity and health behavior: Depression, PTSD, and sexual risk in sexual minority men with trauma histories. *Journal of Consulting and Clinical Psychology*, *85*(12), 1158–1170.

Cloitre, M., Garvert, D. W., Brewin, C. R., Bryant, R. A., & Maercker, A. (2013). Evidence for proposed ICD-11 PTSD and complex PTSD: A latent profile analysis. *European Journal of Psychotraumatology*, *4*, 20706.

Cloitre, M., Hyland, P., Bisson, J. I., Brewin, C. R., Roberts, N. P., Karatzias, T., & Shevlin, M. (2019). ICD-11 posttraumatic stress disorder and complex posttraumatic stress disorder in the United States: A population-based study. *Journal of Traumatc Stress*. Advance online publication. doi:10.1002/jts.22454

Colic, L., Li, M., Demenescu, L. R., Li, S., Muller, I., Richter, A., … Walter, M. (2018). GAD65 promoter polymorphism rs2236418 modulates harm avoidance in women via inhibition/excitation balance in the rostral ACC. *Journal of Neuroscience*, *38*(22), 5067–5077.

Ford, J. D. (1999). Disorders of extreme stress following war-zone military trauma: Associated features of post-traumatic stress disorder or comorbid but distinct syndromes? *Journal of Consulting and Clinical Psychology*, *67*(1), 3–12. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10028203

Ford, J. D. (2015). Complex PTSD: Research directions for nosology/assessment, treatment, and public health. *European Journal of Psychotraumatology*, *6*, 27584.

Ford, J. D., & Courtois, C. A. (2014). Complex PTSD, affect dysregulation, and borderline personality disorder. *Borderline Personal Disorder and Emotion Dysregulationl*, *1*, 9.

Ford, J. D., Spinazzola, J., van der Kolk, B., & Grasso, D. (2018). Toward an empirically-based developmental trauma disorder diagnosis for children: Factor structure, item characteristics, reliability, and validity of the Developmental Trauma Disorder Semi-Structured Interview (DTD-SI). *Journal of Clinical Psychiatry*, *79*(5), e1–e9.

Freyd, J. J. (1994). Betrayal trauma: Traumatic amnesia as an adaptive response to childhood abuse. *Ethics & Behavior*, *4*(4), 307–329.

Fried, E. I., Eidhof, M. B., Palic, S., Costantini, G., Huisman-van Dijk, H. M., Bockting, C. L. H., … Karstoft, K. I. (2018). Replicability and generalizability of Posttraumatic Stress Disorder (PTSD) networks: A cross-cultural multisite study of PTSD symptoms in four trauma patient samples. *Clinical Psychological Science*, *6*(3), 335–351.

Galatzer-Levy, I. R., & Bryant, R. A. (2013). 636,120 ways to have posttraumatic stress disorder. *Perspectives in Psychological Science*, *8*(6), 651–662.

Gilbar, O. (2020). Examining the boundaries between ICD-11 PTSD/CPTSD and depression and anxiety symptoms: A network analysis perspective. *Journal of Affective Disorders*, *262*, 429–439.

Gilbar, O., Hyland, P., Cloitre, M., & Dekel, R. (2018). ICD-11 complex PTSD among Israeli male perpetrators of intimate partner violence: Construct validity and risk factors. *Journal of Anxiety Disorders*, *54*, 49–56.

Greene, T., Gelkopf, M., Epskamp, S., & Fried, E. (2018). Dynamic networks of PTSD symptoms during conflict. *Psychological Medicine*, *48*(14), 2409–2417.

Herman, J. L. (1992). Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *Journal of Traumatic Stress*, *5*(3), 377–391.

Herman, J. L. (2012). CPTSD is a distinct entity: Comment on Resick et al. (2012). *Journal of Traumatic Stress*, *25* (3), 256–257.

Hyland, P., Karatzias, T., Shevlin, M., & Cloitre, M. (2019). Examining the discriminant validity of complex post-traumatic stress disorder and borderline personality disorder symptoms: Results from a United Kingdom population. *Journal of Traumatc Stress*. Advance online publication. doi:10.1002/jts.22444

Hyland, P., Shevlin, M., Fyvie, C., & Karatzias, T. (2018). Posttraumatic stress disorder and complex posttraumatic stress disorder in DSM-5 and ICD-11: Clinical and behavioral correlates. *Journal of Traumatic Stress*, *31* (2), 174–180.

Karatzias, T., Cloitre, M., Maercker, A., Kazlauskas, E., Shevlin, M., Hyland, P., … Brewin, C. R. (2017). PTSD and complex PTSD: ICD-11 updates on concept and measurement in the UK, USA, Germany and Lithuania. *European Journal of Psychotraumatology*, *8*(sup7), 1418103.

Karatzias, T., Shevlin, M., Fyvie, C., Hyland, P., Efthymiadou, E., Wilson, D., … Cloitre, M. (2017). Evidence of distinct profiles of Posttraumatic Stress Disorder (PTSD) and Complex Posttraumatic Stress Disorder (CPTSD) based on the new ICD-11 Trauma Questionnaire (ICD-TQ). *Journal of Affective Disorders*, *207*, 181–187.

Lanius, R. A., Brand, B., Vermetten, E., Frewen, P. A., & Spiegel, D. (2012). The dissociative subtype of posttraumatic stress disorder: Rationale, clinical and neurobiological evidence, and implications. *Depression and Anxiety*, *29*(8), 701–708.

Liddell, B., Nickerson, A., Felmingham, K., Malhi, G. S., Cheung, J., Den, M., … Bryant, R. A. (2019). Complex posttraumatic stress disorder symptom profiles in traumatized refugees. *Journal of Traumatc Stress*. doi:10.1002/jts.22453

Lopez-Castro, T., Saraiya, T., Zumberg-Smith, K., & Dambreville, N. (2019). Association between shame and posttraumatic stress disorder: A meta-analysis. *Journal of Traumatic Stress*, *32*(4), 484–495.

Moshier, S. J., Bovin, M. J., Gay, N. G., Wisco, B. E., Mitchell, K. S., Lee, D. J., … Marx, B. P. (2018). Examination of posttraumatic stress disorder symptom networks using clinician-rated and patient-rated data. *Journal of Abnormal Psychology*, *127*(6), 541–547.

Olff, M., Amstadter, A., Armour, C., Birkeland, M. S., Bui, E., Cloitre, M., … Thoresen, S. (2019). A decennial review of psychotraumatology: What did we learn and where are we going? *European Journal of Psychotraumatology*, *10*, 1672948.

Resick, P. A., Bovin, M. J., Calloway, A. L., Dick, A. M., King, M. W., Mitchell, K. S., … Wolf, E. J. (2012). A critical evaluation of the complex PTSD literature: Implications for DSM-5. *Journal of Traumatic Stress*, *25*(3), 241–251.

Scoboria, A., Ford, J., Lin, H. J., & Frisman, L. (2008). Exploratory and confirmatory factor analyses of the structured interview for disorders of extreme stress. *Assessment*, *15*(4), 404–425.

Shevlin, M., Hyland, P., Karatzias, T., Fyvie, C., Roberts, N., Bisson, J. I., … Cloitre, M. (2017). Alternative models of disorders of traumatic stress based on the new ICD-11 proposals. *Acta Psychiatrica Scandinavica*, *135*(5), 419–428.

Spinazzola, J., van der Kolk, B., & Ford, J. D. (2018). When nowhere is safe: Trauma history antecedents of posttraumatic stress disorder and developmental trauma disorder in childhood. *Journal of Traumatic Stress*, *31*(5), 631–642.

Sullivan, C. P., Smith, A. J., Lewis, M., & Jones, R. T. (2018). Network analysis of PTSD symptoms following mass violence. *Psychological Trauma*, *10*(1), 58–66.

van der Kolk, B., Ford, J. D., & Spinazzola, J. (2019). Comorbidity of developmental trauma disorder (DTD) and post-traumatic stress disorder: Findings from the DTD field trial. *European Journal of Psychotraumatology*, *10*(1), 1562841.

Van Dijke, A., Hopman, J. A. B., & Ford, J. D. (2018). Affect dysregulation, psychoform dissociation, and adult relational

fears mediate the relationship between childhood trauma and complex posttraumatic stress disorder independent of the symptoms of borderline personality disorder. *European Journal of Psychotraumatology*, *9*(1), 1400878.

von Stockert, S. H. H., Fried, E. I., Armour, C., & Pietrzak, R. H. (2018). Evaluating the stability of DSM-5 PTSD symptom network structure in a national sample of U.S. military veterans. *Journal of Affective Disorders*, *229*, 63–68.

Wolf, E. J., Miller, M. W., Kilpatrick, D., Resnick, H. S., Badour, C. L., Marx, B. P., … Friedman, M. J. (2015). ICD-11 complex PTSD in US national and veteran samples: Prevalence and structural associations with PTSD. *Clinical Psychological Science*, *3*(2), 215–229.