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A 4E APPROACH TO TRAUMA-INDUCED DISSOCIATIVE EXPERIENCES: DEVELOPMENTAL TRAUMA AS DISRUPTION IN THE ECOLOGICAL NICHE

IRINA ALEXE[1]

***Abstract**:* Dissociative disorders are generally understood in psychiatry as a disruption or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control or behavior. Still, no definitive theoretical model makes sense of the full spectrum of experiences that currently fall under the large umbrella of "dissociative". This lack of a sturdy theoretical foundation encourages cross-sectional studies that seek to correlate dissociative experiences with pathologies, and relatively few articles focusing on case studies or phenomenological investigation.

I first present two main explanatory paradigms that contend to capture the fairly wide array of dissociative experiences. Then I attempt to enrich the trauma-based model with a 4E understanding of traumatic experiences. I propose that the kind of trauma that may lead to dissociative experiences can be understood as continuous disturbances in an individual's ecological niche. This would put them in the position of not having constant and predictable access to a personalized regulatory affective, cognitive and instrumental niche, which are integral parts of the individual's whole ecological niche. To flesh out the hypothesis, I articulate making sense of developmental trauma in the language of affordances, and explore the implications for derealization and depersonalization as a subset of dissociative experiences.

Keywords: affordances, ecological niche, 4E cognition, dissociative disorders, developmental trauma, depersonalization/derealization disorder.

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[1] Irina Alexe is a student in the Cognitive Science Bachelor Programme at the Faculty of Psychology and Educational Sciences, University of Bucharest.

Introduction

Dissociative disorders and symptoms have incurred several attempts at reconceptualization. They were first introduced as a separate category in 1980, after being for quite a long time amassed under the very lax label of "hysteria" (Van Der Hart & Dorahy, 2022). Although there are currently different competing explanatory models of dissociation, it is generally understood as a disruption or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control and behavior (DSM-5-TR; American Psychiatric Association [APA], 2022).

Although an abundance of theoretical models seek to explain the causes and processes that drive dissociative experiences, most focus on various predictors without trying to find a common denominator among them and without providing a complete causal mechanism that would account for the formation and persistence of dissociative symptoms. These thereby fail to do justice to the phenomenology of experiences centered around the feeling of disconnection from the environment, from one's own body and from one's personal identity.

In this text, I argue that a 4E approach of the mind can better conceptualize at least some dissociative experiences by tracing them back to disturbances in affordance spaces. I limit the scope of this analysis to depersonalization/derealization disorder (DDD), although I believe that it can, with suitable changes, be extended to cover multiple experiences that fall under the dissociative umbrella.

My analysis will be restricted to an etiological explanation that is based on the posttraumatic model of dissociation, which takes prolonged distress to be the cause of DDD. There is, arguably, a difference between the conditions in someone's past that have led them to develop pathological levels of depersonalization/ derealization and the way this disorder manifests in their everyday life once the symptoms surpass the clinical threshold. The disorder presents itself as recurring dissociative episodes that can vary in duration (a couple hours up to several years, as per the ICD-11 description), that are usually precipitated by stressors or by personal triggers. What exactly happens during an episode and how

the triggering occurs are questions beyond the scope of this work and my current understanding of the subject.

One limitation of my approach is that it takes for granted the already lacking, current psychiatric understanding of DDD (as presented in the DSM-5-tr and ICD-11 and instrumentalized in the psychiatric measures presented below), and so it inherits its critiques. These include: whether the symptoms grouped under DDD are homogenous enough, in their phenomenology and etiology, to be considered one clinical disorder, how valid is pathologizing these phenomena in the first place, and whether it is justified to classify DDD as a different disorder rather than a class of symptoms that appears in trauma-related and affective disorders.

1. Explanatory models of dissociative disorders and concept instrumentalization

Two main explanatory models compete in the literature. One major challenge in trying to make sense of dissociation consists in the fact that the word "dissociation" is used in the literature to refer to quite a wide range of experiences. This makes ensuing research seem patchy and not grounded in a comprehensive theory, which was perhaps to be expected given the history of the disorder classification and the heterogeneity of experiences clustered under this concept.

The sociocognitive model (Lynn et al., 2022) questions whether trauma is an exclusive or necessarily potent catalyst of dissociation and proposes that the intricacies of dissociative disorders, DDD included, are to be at least in part explained by a combination of socio-cultural factors. These factors include understanding the mind as somehow separate from the body and considering the self as composed of different parts that can be contradictory, and this contradiction as pathological. This model also highlights the role of therapeutic jargon and methods in ingraining patients and clients with the abovementioned ideas and thus precipitating dissociative symptoms. Individual traits like suggestibility and fantasy proneness, as well as cognitive failures such as memory lapses are cited as factors that make an individual more prone to develop dissociative symptoms if exposed to this fragmented view of the human mind and self.

This model calls into question the clinical organization and description of the symptoms and leaves room for an argument to be made about the possible iatrogenic nature of the diagnosis. It bears mention that arguing against the theoretical conceptualization and explanation of a set of symptoms differs from claiming that the "symptoms" are born out of improper use of metaphors and fallacious understanding of the mind as separate from the body. Yet even if the complete dissolution of the diagnosis were warranted, this would not help make sense of anomalous distressing experiences.

The trauma-based model, which seems to be the most in-tune with the general line of psychiatric explanations, posits that dissociation occurs as a defense mechanism against early traumatic experiences in order to protect the mind against inescapable psychic pain (Şar et al., 2017). The feeling of one's self and environment as unreal or divorced from one's immediate experience is hypothesised to happen as a means of distancing the present self from reminders of past trauma or abuse. Attachment theory has been integrated into this model, adding that disruptions in attachment to the caregiver and the resulting incompatible representations of the self can partly account for depersonalization/derealization symptoms by causing elevated and persistent distress and negative affect (Buchnik-Daniely et al. 2021). These conditions have been listed as necessary but not sufficient, positing, as an added condition for developing these symptoms, the ability to enter a self-induced hypnosis-like state and relying on it consistently.

The trauma-based model seems to me the most fertile starting point. Positing some adverse experiences as the precursors to the dissociative experiences is, apart from highly intuitive, quite convenient, since multiple ways of defining trauma and adverse experiences make enough room to fit in the idea of disturbances in affordance spaces, which indeed can be perceived as inconsolably painful.

A somewhat separate matter is the operationalisation of dissociative experiences, separate only in the sense that research uses atheoretical clinical measures and scales that can only go so far in making sense of the varying etiology of these mental phenomena and in providing directions for therapeutic interventions. relations between

various comorbidities and dissociative symptoms – for establishing causal links is often impossible with cross-sectional studies.

Such correlations have been found between dissociative symptoms and PTSD symptoms, for example, which provides support for the trauma-based model. Other disorders that have significant correlations between the symptoms are DID, BPD (Borderline Personality Disorder) and schizophrenia (Carlson, E. B., & Putnam, F. W., 1993). However, without a properly conceptualized and testable explanatory mechanism that accounts for the phenomenological qualities of the dissociative experience, empirical research cannot do much more than identifying high-risk populations and quantifying the societal cost of these disorders.

Multiple scales circulate in the literature, three particularly relevant here. First is the Dissociative Symptoms Scale (DSS) (Carlson et al., 2016), which measures an array of dissociative symptoms experienced in the last weeks – so it focuses more on state rather than trait. The DDS has 4 sub-scales: Depersonalization / Derealization, Gaps in Awareness and Memory, Sensory Misperceptions and Cognitive-behavioral Reexperiencing, and has demonstrated reliability and validity in multiple clinical and non-clinical samples, being particularly useful in research.

The Dissociative Experience Scale II (DES-II Carlson, E. B., & Putnam, F. W., 1993), has been modeled after clinical population and attuned to pick up clinical cases. The third and most recent and comprehensive scale is the MID (Multidimensional Inventory of Dissociation) (Dell, 2006), which was built with the purpose of assessing the phenomenology of pathological dissociation, so as to diagnose dissociative disorders while trying to exclude any non-pathological forms of dissociative behavior. The MID was designed for clinical research and for diagnostic assessment of patients who present a mixture of dissociative, posttraumatic, and borderline symptoms. It has demonstrated incremental validity over DES by predicting 18% more of the variance in weighted abuse scores on the Traumatic Experiences Questionnaire (TEQ).

The depersonalization/ derealization facet of dissociation, the one I aim to provide an account for, is focused on the feeling of disconnection between one's body and environment. Items that fall under this in the DSS

are "My body feels strange or unreal", "Things around me feel strange or unreal", "I felt like I was outside myself, watching myself do things", "I felt like I was in a movie – like nothing that was happening was real", "I felt like I wasn't myself", "Parts of my body seemed distorted – like they were bigger or smaller than usual". This is the kind of phenomena that I claim a 4E approach can provide an etiological explanation for.

2. Dissociative experiences as consequences of disturbances in affordance spaces

Two core tenets of the 4E approach are that the mind is not limited to the brain and skull, but extends into the body and environment, and that the mind is a dynamic system coupling body and environment in action. It would follow that whatever perceived disconnection should be called "disconnection" only metaphorically, as severance is literally impossible. If so, when someone feels like their reality is not real, this should be interpreted in terms of their reality presenting as unreal and uncooperative to them, which can be translated in the language of affordance spaces. The same can be said in relation to the presupposed etiology of dissociative disorders: I argue that the kind of "trauma" that can make someone have pathological dissociative experiences can be conceptualized as the person being denied the construction of and/or constant and predictable access to a reliable regulatory ecological niche. In this section, I put forward my reinterpretation of the posttraumatic model of dissociative pathology and sketch a mechanism that may cause the phenomenological peculiarities of people who end up exhibiting dissociative symptoms.

"Affordance" refers to how an individual perceives and responds to features in their environment; it represents the possibilities for action that something or someone presents to the subject. As we go through life we construct, maintain and modify our personal niche: a structured self-styled environment tailored to reflect that person's needs and personal way of living, a perceptually modified environment that constrains their affordance spaces. Our personal niches have at least in part shared with

those of other people, and their construction and proper functioning depends on a communal effort.

For the purpose of my analysis, I find it useful to delimit three categories of affordances: affective, cognitive and instrumental. Affective affordances are related to our emotions and their regulation, cognitive affordances underwrite our cognitive capacities and ability to make sound inferences and to judge situations, whereas instrumental affordances pertain strictly to the satisfaction of basic physical needs, survival and safety. Of course, one object or a person can afford all three aspects to someone, or one thing to a person and another to someone else: petting a cat can afford emotional comfort and regulation for an animal lover and just a way to get rid of farm pests for another.

This threefold distinction is relevant to a 4E reconceptualization of trauma, as each type of affordances pertain to different events or experiences that fall under the "trauma" umbrella in the literature. Instrumental affordances are directly impacted in so-called "life-threatening" traumatic experiences, when the basic physical needs cannot be met because of the precarity of the environment (living through poverty, war, physically abusive relationships). Disturbances in affective affordances capture emotional abuse. And cognitive affordances ground cognitive distortion as result of under-negotiated shared reality with the people one shares an ecological niche with. The three types of affordances bleed into each other and scaffold one another; heightened negative affect impacts cognitive abilities, which in turn limits the availability of cognitive affordances. In the context of depression and suicidality, the pervasive feeling of hopelessness can restrict cognitive affordances involved in problem-solving situations, so that a bridge affords jumping off as a maladaptive solution to problems that appear otherwise unsolvable. This tripartition of affordances groups under the same explanatory model different noxious experiences that can lead people to exhibit post-traumatic *sequelae*, and avoids generating laundry lists of traumatic events as in some scales that test for developmental trauma (Adverse Childhood Experience scale, for instance).

In what follows, I will focus on affective aspects of the ecological niche, as it appears to me that the disruptions incurred in this area are more insidious than others. The affective niche covers all the regulatory possibilities that we attribute to the environment (people included) that are key to the proper functioning of our psyche. Reliable access to a predictable affective niche is essential for regulating and making sense of the inevitable undesirabilities of life, just as reliable access to a predictable instrumental and cognitive one is. I take traumatic experience to consist of an individual being denied the construction and constant access to a reliably scaffolded predictable niche. This covers both what the literature calls "developmental trauma", as well as traumatic experiences that can occur in adulthood. I also co-classify physical and emotional trauma because, even if it is pretty easy to see how physical trauma can impact people whereas it is more of a challenge to account for severe symptoms in the absence of severe physical abuse or neglect, traumas of differing severity can sometimes lead to comparable results notwithstanding.

Niche constructing begins in childhood: people manipulate their environment, the space they inhabit regularly, by refining preexistent affordances and generating new ones – cognitively, instrumentally, affectively. Much like the spider's web, humans modify their surroundings by decorating or renovating a house or office in a way that fits their needs and way of life (and one person's way of living may not fit another's). Affective niches rely on personal symbolism (e.g., putting on a particular bracelet during a hard exam), or they can be grounded in social or cultural practices (prayer or yoga affords emotional regulation). People also provide regulatory opportunities for each other in healthy relationships. Being provided with comfort, advice and support are essential for a healthy emotional life and overall function – when these are missing, expect negative consequences. Others enrich our affordance spaces and, in our early development, we learn to build affective niches with support from caregivers. Children learn the social constraints that confine their affordance spaces (don't throw the porcelain plate on the ground), they seek comfort when upset – in the presence of the caregiver, or in holding a particular toy.

Niches change more during early development because so do the individual's physical and mental abilities which shape them. Adults expect themselves and others to have already built affective, cognitive and instrumental niches tailored to their own needs. Sometimes children's needs are not being properly met or recognized, and parents may constantly and unpredictably deny the child access to objects that afford regulation without helping them to substitute the function of that object. Same goes for denying them the customization of their personal space in a way that fits their natural inclinations. Out of abuse or neglect, because of the child's inability to benefit from a stable niche, their predictions regarding the regulatory possibilities their environment affords are constantly wrong or impossible to make, so the set of affective affordances they work with shrinks.

In adult life, a similar thing can happen. Even supposing that an adult learned to construct a personal niche and benefited from it, unplanned events can destroy it. One then ends up in the same situation of having to prop up a limited set of assumptions against environmental uncertainty or adversity, which hinder niche construction. Derailing events may include home displacement (due to war, natural disasters, gentrification), abusive relationships, or moving to a different country without your friends and loved ones. All these call for niche reconstruction and can be more or less traumatic or cumbersome, depending on what one can achieve and whether one intended it to begin with. Pending resolution, niches lost or rebuilt on the go make for an unpredictable and unreliable environment. These disruptions invite an array of mental health issues.

Unpredictability and instability can feel like your agency is eroded. Being able to draw life narratives that round up your identity and goals is undermined. For the capacity to organize a coherent self-concept is scaffolded by your social environment and interaction with others. These others could fail to include you in their shared space, or you could find the affects they afford conflicting or destructive. One way out is to block

the integration of bothersome events, affects and thoughts into your self-concept. This provides a how-possibly causal explanation of dissociative experiences, as the main symptoms described in scales like MID (Multidimensional Inventory of Dissociation) revolve around amnesic episodes, the perception of multiple states of personality and feeling detached from one's body and environment.

Especially for depersonalization and derealization, the bouts of dissociation can be accounted for as periods of time in which fewer affordances are accessible, the expected or needed scaffolding is missing, and routine cognitive or affective processes cannot take place as intended, whence the perceived disconnection and the feeling of unreality. Feelings of derealization, of reality not being "real", echo a mismatch between one's environment and what was required to meet one's goals. Depersonalization, or the feeling of detachment from one's own body, I relegate to a lack of integration of the self, body or certain body parts. Integration is described in the literature as the living body's ability to take something into itself and thus reconfigure how we experience our bodies and what we can do with them. Object incorporation obtains when we get used to maneuvering a foreign object with our body so that the object becomes transparent to us; we act as if the object is part of our body. In depersonalization, one's body (or parts of it) lose the property of being experientially transparent: one no longer experiences the body as being part of their self, or as being seamlessly connected with their mind. The body is experienced as affording limited manipulation possibilities instead of its full range of physical abilities, in a way that is dysfunctional and possibly accompanied by skill regression (clumsiness).

3. Conclusion, further directions and implications

I conceived of dissociative experiences as being the fallout of a traumatic past in which one was (perhaps repeatedly) denied the construction of and/or constant and predictable access to a regulatory affective and cognitive niche, generating failed predictions about environmental

changes. I illustrated how that applies to depersonalization and derealization, i.e., how the lack of predictable and reliable regulatory affective scaffolding may lead to experiencing one's own body or the environment as unreal and unintegrated into the self. While I would not venture to claim that every ailment under the dissociative umbrella can be accounted for this way, I believe that dissociative identity disorder can also be seen through this lens. This extrapolation, however, would involve explaining how feeling dispossessed of agency and self-narratives one cannot coherently integrate into a self-concept can precipitate a dissociative identity disorder.

The reconceptualization of developmental trauma as presented above provides a unified account of multiple kinds of experiences that are damaging to the psyche, and the sense of self of a person. It integrates both physical harm and more subtle aspects of emotional neglect under a framework that uses the same conceptual tool, affordance spaces, to explain symptoms traditionally attributed to a narrow list of events.

Enlarging the definition this way may account for a larger part of the pool of people who have this experience even if they don't check the boxes for standard physical developmental trauma. Niche disruption on the three levels described would include both physical trauma of the sort that appears on ACE questionnaires and emotional abuse and negligence that affect emotional dysregulation; it encompasses the predictors of dissociation under the same conceptual framework. All of this is conceptual work that requires testing.

Knowing predictors can be useful in identifying the population at risk for developing dissociation disorders. But it cannot do much in terms of healing for specific people who already experienced upticks in specific predictors. A how-possibly causal explanatory mechanism of dissociative experiences, such as that sketched here, could be leveraged in therapy *via* intervention plans. This 4E model of traumatic experiences may also be used in clinical assessment if turned into a scale. As it encompasses a wider range of experiences, its comprehensiveness may facilitate the diagnostic process.

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