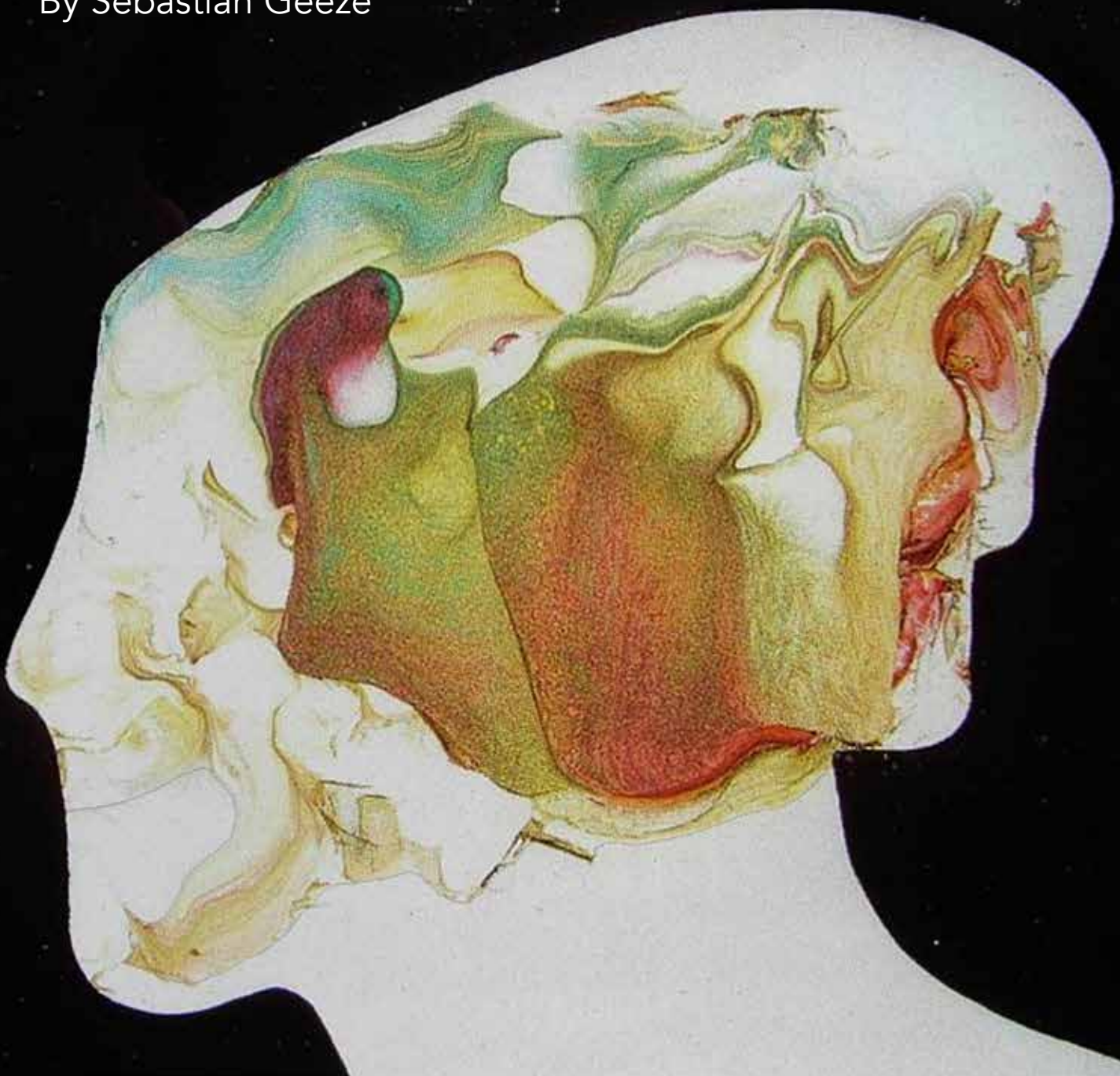
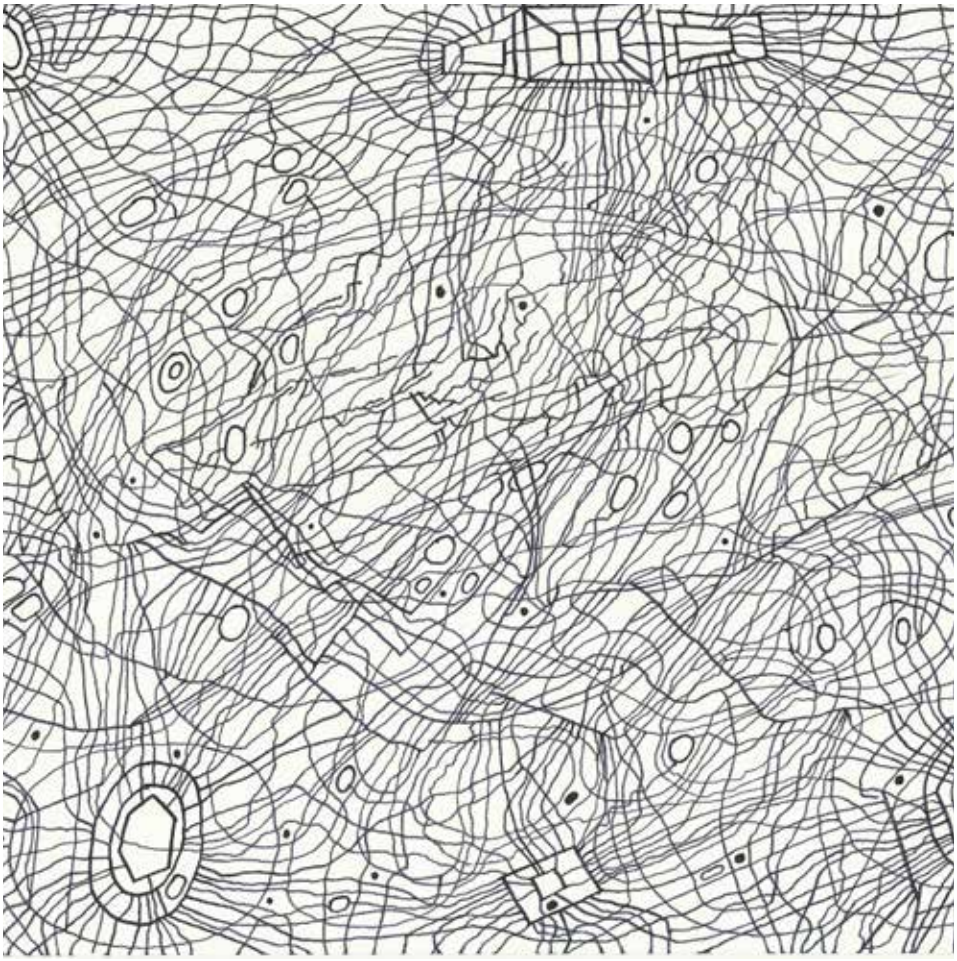
DID: Is it trauma or just fantasy?

By Sebastian Geeze



In front of Dr. Martinez sat a tall, attractive 28-year-old woman with incredible blue eyes. Her name was Madeline. She had a degree in commerce, but when she was 19, she spontaneously married a man that was 15 years older than her. The relationship resulted in a now three-year-old daughter, but it didn't last much longer. When Dr. Martinez asked about Madeleine's past, he found out that she had no memory from the age of 12 through 18. During the three years before she saw Dr. Martinez, Madeline had endured a lot. She had severe depression and anxiety and attempted suicide several times. When questioned about the reasons for her suicide attempts, she said that in those moments she remembered "hearing voices that tormented her." Curiously, she had no memory of the specific moments when she tried to take her life. While she was previously diagnosed with depression and borderline personality disorder, she was referred to Dr. Martinez because of the suspicion that there might be more to her story and that understanding it might be helpful in her treatment. During their first interview, he detected a quick change in her behavior. The woman sitting in front of him suddenly felt different. She looked at him and introduced herself again.

But her name wasn't Madeline. Her name was Flor. She talked about Madeline as being "stupid, the mother of a little girl, too good with people and falls in love too quickly." She revealed that her mission was to "protect Madeline from other people." After a long conversation with Flor, another sudden switch occurred. For about 20 seconds, the person sitting in front of Dr. Martinez entered a trance state, and when it was over, Madeline was back and "interestingly, Madeline had complete amnesia of the conversation with Flor, which had lasted about 30 minutes". During this session, it became clear to him that this this person suffered from Dissociative Identity Disorder (DID) [1].



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DID in History

Dissociative Identity Disorder has been around for a long time. In the middle ages, the symptoms of DID were often associated with one being "possessed by the devil." Therefore, people with DID were often subjected to exorcisms that just worsened their symptoms. The first well-documented case of DID dates back as early as 1584. In this case, the 25-year-old nun, Jeanne Fery, documented her own exorcism, with precise descriptions of DID-like symptoms such as identity fragmentation and a past history of childhood trauma [2]. When demonic possession was no longer a logical explanation in society, people began to refer to individuals showing DID symptoms as hysterics.

In 1882 Louis Auguste Vivet was the first case in which a doctor actually spoke of multiple personalities and is considered the first official case of DID [3]. Vivet experienced a high frequency of "hysteric attacks". During these attacks, several of his characteristics changed significantly, including his personality and appetite. He shifted from a gentle personality that was nice to be around to an impulsive person that was a danger to others; he could also become a quarrelsome, childish character, that tried to steal things from the people around him.

Until the late 20th century,

the disorder was characterized by something called Hysterical Psychoneuroses, which included alternate states of consciousness and amnesia. Through the book Sybil, the disorder gained popularity and the number of cases rose drastically. In the 1980s, the disorder was first included in the Diagnostic and Statistical Manual of Mental Disorders, —a collection of all mental disorders—under a new name: Multiple Personality Disorder [4]. However, in 1994 the name was changed to our current classification, Dissociative Identity Disorder, to reflect a better understanding of the condition.

What actually is DID?

Dissociation is something we experience every day. Think about when you are sitting in class, listening to a professor drone on about some boring topic in a monotonous tone. You stare out the window and watch patrons walk by until your mind wanders off. You get lost in the view without even paying attention to what you see. You slowly disconnect from your thoughts and feelings and eventually feel like you're disconnected from your whole body. Or when you have to drive a long distance through the midwest on the same highway that just goes on and on. At some point, you suddenly realize that you've driven for five hours and your mind went on autopilot mode without even realizing it. However, dissociation exists on a spectrum and can become problematic when it interrupts daily life.

The most severe form of dissociation is seen in DID. The name was used due to the misconception that a person creates multiple whole personalities that live together in their body. In reality, it is a little more complicated. Instead of having various whole, new personalities, I would describe it more as having one personality that dissociates into many different parts, also called alters, which control your actions, thoughts, and consciousness at different times [4]. This means that there is one core personality, equivalent to Madeline from the previous case, and one or more alters, equivalent to Flor [1]. The number of alters can differ from person to person. In some cases, we just see two or three different alters, while, for example, in the case of Madeline, over ten alters were identified [1]. There are even cases with more than 100 different alters. Many of the alters are not full alters but identity fragments that just come out in particular situations. The alters can differ in various characteristics. This can include age, gender, race, sexual orientation, and many more [5]. In the example of Madeline, one of her alters was Andres, a representation of her older cousin that sexually abused Madeline between the ages of nine and twelve. Andres was hateful, angry, and tried to destroy the core personality. On the other hand there was also Landa that had the voice and emotional needs of a child not even nine years old because of the neglect Madeline experienced from her mother during childhood [1]. Case studies and reports have even shown neurobiological distinctions between different alters. This doesn't mean that people suddenly become superhuman when switching to a different personality, as depicted in the 2016 thriller "Split." Biological changes such as changes in heart rate, blood pressure, and brain activity can be observed [6]. These differences can leave you questioning how the disorder, and the various alters, manifest. One of the most striking differences between alters includes a change in eyesight. In multiple known cases, there are severe contrasts between the alters so that one needs glasses to see properly, while another alter can see perfectly without [6]. Different alters can also have medical conditions independent from the other alters, and even from the core personality. In an interesting case, a woman diagnosed with DID was admitted to the hospital because of a diabetic shock. How-

"Dissociative Identity Disorder." Image by 04Mutki (CC BY-SA 4.0).

ever, when the doctors arrived to treat her, no symptoms of diabetes could be found. It was discovered that the woman had DID and switched to a different alter that didn't have the condition while she was waiting in the examination room [7].

People with DID often experience severe gaps in memory [4]. Some of the personalities can access the memories of the other alters and know what happened when they weren't in control. This is often the core personality but can also be the case for alters. Other alters may not have access and just remember what they experienced. Some alters are also specific in a way that they are unable to access the memories of other alters and vice versa. This means that if the core personality regains control over the body after an alter it doesn't have memory access to, the core personality has no idea what happened during that time.They might become conscious in a location they have never been to, wearing clothes they have never seen before, and being around people they do not know. In Madeleine's case, Flor was an alter that the core personality did not have access to. As mentioned earlier, after Flor came out during the interview, Madeline couldn't remember anything about the conversation she had with Dr. Taboas [1].

DID is a very complex disorder. It is even more complicated because people with DID often suffer from comorbid disorders, as we can see in the case of Madeline, who also suffered from depression and borderline personality disorder. Additionally, research on the underlying neurobiological mechanisms of the condition is difficult because currently no animal model exists to perform invasive research. However, based on studies with humans, including anatomical and brain imaging studies, two conflicting models have emerged.

DID as the result of trauma...

One of the two currently existing explanations for the cause of DID is the trauma model (Figure 1A). Supporters of this model believe that DID is the result of severe childhood trauma. This can include many different types of trauma. However, in about 90% of the known cases, individuals experience some child abuse or negelect [5]. The child abuse can be any combination of emotional, verbal, physical, or sexual abuse. The abuse also often occurs from a person the child is emotionally closely connected with, like a parent or caregiver, and which they rely on for survival. Because the child is so dependent on the person causing the trauma, they cannot acknowledge it without fearing that they might lose the person. In this model, dissociation is seen as a natural coping response that helps the individuals to deal with the trauma while it is happening, as well as with the situation that follows. This means that while the individuals experience the trauma, they can dissociate into another personality that they don't associate with themselves. Therefore, a different character experiences the trauma and deals with the consequences. At the same time, the core personality can stay protected and still keep the same view on the emotionally close person that is causing the trauma. In this whole process, age plays an important role. It is currently assumed that the trauma has to happen before the age of ten to result in DID [8]. This is because, after this age, most children have developed a stable and integrated identity of themselves and are capable of coping with trauma.

But not all children that experience trauma during their childhood will develop DID. Other factors increase or decrease the chance of developing the disorder. One aspect is our underlying biology, which is determined by our genetics [9]. Our genes are like a blueprint for our body that determines the likelihood for many different things, including how easily we dissociate. Some people have a lower likelihood and dissociate less easily, and some people have a higher likelihood and can dissociate very easily. The higher your natural baseline for dissociation is, the more likely you will develop DID when exposed to trauma as a child. But, your genes are not the only factor that influences how easily you dissociate. The environment we grow up in and what we are exposed to daily also plays an important role [9]. This means that an individual with a lower baseline might grow up in an environment that shifts how easily they dissociate to a higher level than another person that started with a higher baseline. Another critical factor is the level of stress the child is experiencing in their life. If a child is growing up in a high-stress environment, they are more likely to develop DID than if they are brought up in a more stable environment. The last factor that mediates how likely a child develops DID is if they have a good social support system to aid them through the trauma. [9]. If the child has a good social support system that provides comfort and strong emotional relationships with other people, they might be less prone to develop the disorder than if the child's only emotional and social support is the same person caus-

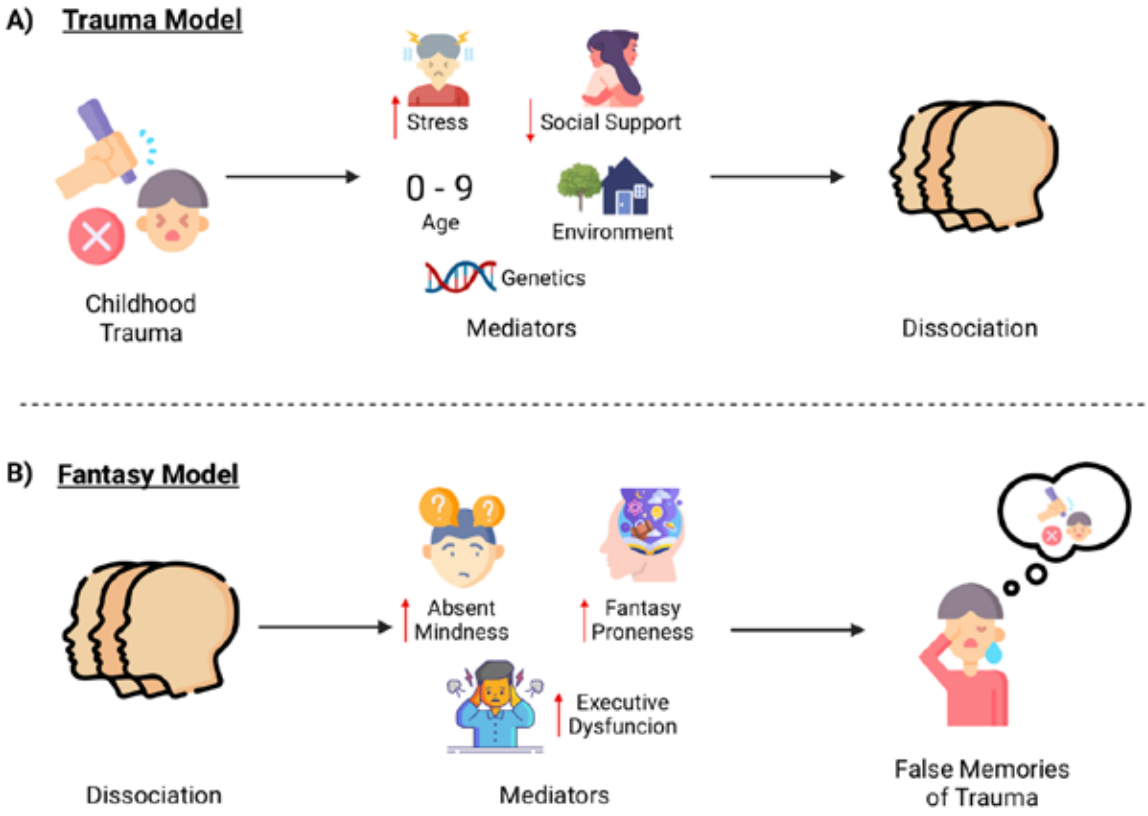

***Figure 1**: In the Trauma Model (A) for DID, childhood trauma causes dissociation. In the Fantasy Model (B) dissociation leads to false memories of trauma. Original image by Sebastian Gaese. Created in BioRender. Designed using images from Flaticon.com.*

ing the trauma.

...Or is it just in your Head?

The other explanation for the cause of DID is the fantasy model (Figure 1B). This model views dissociation as a psychological process entirely unrelated to trauma. Previously, I explained people's baseline of dissociation that is determined by their genes, which can increase depending on the environment they grow up in. For supporters of the fantasy model, this baseline of dissociation is the starting point [9]. People with a very high baseline will start to dissociate extensively without any external influences. This dissociation will lead to false memories and self-reports of trauma by the individuals. The whole process is mediated through several psychological characteristics. One of these characteristics is fantasy proneness, which basically describes how imaginative a person is [9]. In an study by Harald Merckelbach and colleagues at the University of Maastricht in the Netherlands, they found out that fantasy proneness positively correlates with dissociation to predict self-reports of trauma [10]. In the same study, the researchers also identified increased absent-mindedness as a mediator in this relationship. Absent-mindedness describes a characteristic where people are with their minds somewhere else and either not paying attention or forget to do specific things [9].

One example would be if you constantly forget where you put particular things, like your keys or your glasses. The third mediator between dissociation and self-reports of trauma is increased executive dysfunction, which describes problems controlling your thoughts, emotions, and actions [9]. One example includes problems focusing on one specific task or being very easily distracted by your environment. Thus, this fantasy model describes how dissociation is the starting point for DID and leads to false memories of traumatic events that then get reported by the individuals. Therefore, supporters of the model believe that most of the traumatic experiences reported by DID patients are creations of their imagination.

The newest tea on the subject

While there has been an ongoing debate between supporters of both models, new research has appeared in support of the trauma model. A recent study from Dr. Reinders's laboratory in the Netherlands investigated differences in measurements for psychological trauma and fantasy proneness. Actual DID patients, actors that simulated DID, individuals with PTSD, and healthy controls were the participants. Using actors that simulate DID is a common practice in research [11]. Many doctors still believe that DID is not a real disorder but, rather, is either created through pressure during therapy or is simply simulated by the individuals. The researchers included a group of trained actors to simulate the disorder to control for this scenario. Additionally, studies usually include a group of post-traumatic stress disorder (PTSD) patients because of the close connection between both disorders. PTSD is a mental disorder that can emerge from traumatic experiences and is normally accompanied by flashbacks to the traumatic event and severe anxiety. In the latest edition of the Diagnostic and Statistical Manual of Mental Disorders, a new dissociative subtype for PTSD was included, directly followed by DID, to show the close relationship between both and support the idea of DID as a form of PTSD [5]. Therefore, PTSD patients are included to identify connections between DID and PTSD as well as a control for the trauma model in comparison to DID simulators.
In their study, the Reinders lab used different questionnaires and tests to identify characteristics associated with either the trauma or the fantasy model. The study found that the DID group had the highest trauma measures, closely followed by the PTSD group [11]. However, the DID simulators and healthy control group had significantly lower trauma scores. On the other hand, the researchers found no significant difference in characteristics associated with the fantasy model between DID patients and the other groups. This study shows that DID and PTSD patients have a stronger connection to trauma and that people cannot fake measures of trauma by simulating DID. This study also demonstrates that DID patients do not show more characteristics associated with the fantasy model, including no difference in higher fantasy proneness and no difference in the creation of false memories. Therefore, this study further supports the existence of the trauma model and invalidates the basic characteristics of the fantasy model.

In a different study, the same lab tried to further investigate the connection between DID and PTSD by looking at anatomical differences in the hippocampus [12]. The hippocampus is a brain structure closely related to learning and memory and has previously been shown to be significantly smaller in DID patients. It is a symmetrical structure on the right and left sides of the brain. In the study, the researchers used magnetic resonance imaging (MRI) to measure the brain structure of DID patients, PTSD patients, and healthy controls. MRI is a common technique to get detailed images of body tissues, including your brain. Additionally, the researchers assessed the presence and severity of childhood trauma, as well as dissociative symptoms, in the DID and PTSD patients. The lab found that the overall hippocampal volume in DID and PTSD patients was significantly smaller than in the healthy control group (Figure 2). The most significant decrease in hippocampal volume was found by the researchers in the DID

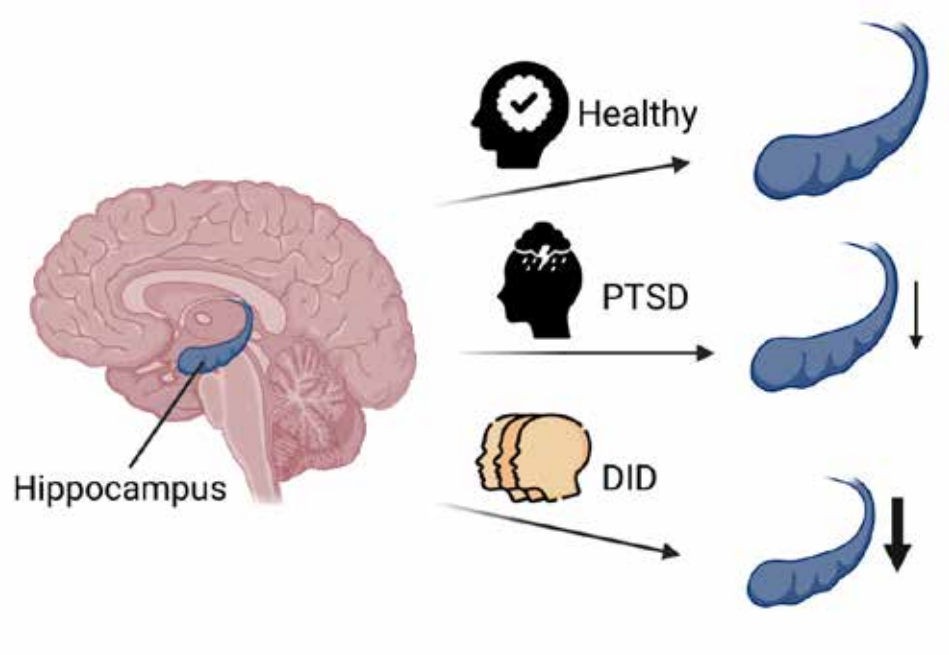

Figure 2: *Dissociative Identity Disorder (DID) and Post-Traumatic Stress Disorder (PTSD) patients have a smaller hippocampus than healthy individuals. This effect is stronger in DID than PTSD. Original image by Sebastian Gaese. Created in BioRender. This cover has been designed using images from Flaticon.com.*

group, with a reduction of 10% on both sides of the hippocampus. PTSD patients with a history of childhood trauma also showed a significant decrease of over 7% on both sides [12]. Additionally, the lab found that a reduction of the overall hippocampal volume, as well as the volume of different substructures in the hippocampus, was significantly associated with increased severity of childhood trauma and dissociative symptoms. These findings further show that there is a strong connection between DID and PTSD, and that DID can even be considered as a very extreme form of PTSD. Therefore, these findings further support the trauma model of DID and the idea that childhood trauma leads to the disorder.

Trauma or Fantasy: What does it matter?

Even though DID is prevalent in around 1.5% of the population, diagnosis of DID is still lacking, and it is often confused with other psychiatric disorders. Individuals with DID receive an average of four diagnoses before being accurately diagnosed with DID [13]. This includes treatment with the wrong medications and hospitalizations, which leads to high costs and even more personal suffering.

Slowly but steadily, more and more research has come forward in support of the trauma model. However, many still believe in the fantasy model or don't believe that DID is an actual disorder at all. Supporting the fantasy model means discrediting the abuse and trauma the majority of DID patients experienced during their childhood. Imagine telling a trauma victim who worked hard to process their lived experiences that what they went through was just a figment of their imagination. This can be a devastating experience they might not recover from.

Research slowly shows what destructive effects child trauma can have on brain development and what impact it has on the development of psychiatric disorders [13]. There is also enough research that has validated the strong connection between DID and childhood trauma. Therefore, it is questionable why there are still controversial views on the underlying cause of DID. It is crucial that the field comes together and connects its resources to make DID a publicly acknowledged, uncontroversial psychiatric disorder. If more resources are allocated towards researching the underlying neurobiological aspects of DID and the connection between the disorder and trauma, then we can improve diagnostic measures to diagnose the disorder accurately. It will also further improve treatment of the disorder which will enhance day-to-day life and the proper integration of the different alters into one cohesive personality, which is the ultimate treatment goal.

After several years of therapy and many ups and downs, Madeline was able to integrate her alters into her core personality and start a new life in a different country[1]. In a letter she wrote to Dr. Martinez, she describes her new life experience. "Right now I am living a different stage in my life. I see my life full of opportunities and I want to rejoice them." In the end, research is not about trying to forcefully push through a theory that doesn't hold up anymore, but to do the best for the individuals that benefit from your research, to help them try to achieve what Madeline achieved.

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