

Fractured Minds

by Rita Carter
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It's hard to know who you are when there are several distinct personalities inside you, or if you feel detached from your own body. Rita Carter asks what these strange conditions reveal about our sense of self.

'JOHN, Jay, Decca, Mac and Sanji describe themselves as a happy household. John, speaking for them all, says they have the odd spat, as people living closely together always do. But on the whole they like and support one another, share in the burdens of day-to-day living, allow each other the freedom to pursue their own interests and generally rub along like any other group of house sharers.

John and his friends don't just share a house, though. The arrangement is much more intimate. They share a body. Each of them is a personality - an "alter" - in what they call the "system" known publicly as John. Were they to come to the notice of a psychiatrist, John would almost certainly be diagnosed as having dissociative identity disorder, the strange condition more commonly known as multiple personality.

We all have conflicting thoughts and feelings from time to time. We experience mood shifts, and have ideas and desires that change from moment to moment. Nevertheless, we mostly experience ourselves as a single, solid and continuous "me". Why do we feel this way? Where does our sense of self come from? And why is it different for people who experience multiple selves?

We take the feeling for granted, yet our "normal" sense of being a self anchored in one particular location and time, the concrete "me, here, now", is a creation of our brains and thus more fragile than it may seem. A slight shift in the way the brain processes information may destroy the comfortingly familiar feeling of being a single, continuous being.

The states of mind that most commonly disturb our sense of self are known collectively as dissociation. They range from vague feelings of "spaciness" to bizarre conditions such as multiple personality disorder and "fugue" - the sudden loss of personal memories. Some psychiatrists consider the symptoms of the weirder dissociative states to be fictitious - a form of "acting out" rather than an involuntary response to altered brain function. But recent evidence from brain scanning studies is not only giving these conditions credibility, it is beginning to reveal how our sense of self is generated.

Normally, certain cognitive faculties - memory, self-recognition, consciousness, sensation, intention and action - are bundled together, giving us a sense of singular and continuous identity in a single stream of experience. In multiple personality and other dissociative states, these strands of "self" are experienced separately.

People with multiple personalities have several distinct states of mind, each of which has the habits of thought, emotions and memories of an individual personality. Some, like the John system, share awareness of one another - so-called "co-consciousness" - rather like the common dream experience of being both the observed and the observer. "When one of us is in charge of the body the rest of us are sort of there in the background," John says. "We can't actually do anything, but we see what is going on, we are aware of what the one who is 'out' is thinking, and we see everything through their eyes."

Multiple personality disorder shows how important our personal memories are to our sense of who we are. In people with the condition, memories of events that occurred when one particular alter was in charge of the body are "claimed" by that personality, so when another alter appears these events feel as though they happened to someone else.

In John's case each alter knows the others' memories, but they do not experience them as their own. They can therefore "fake" being a single personality and their strange inner life may go undetected. In a few rare cases, though, like those portrayed in the films *The Three Faces of Eve* and *Sybil*, the personalities are so cut off from one another they do not even know of the others' existence. Each alter is able only to retrieve their own memories, so they all have "gaps" in their lives when it seems they did not exist.

Sue, a multiple interviewed for the BBC TV's *Horizon* science series (11 November 1999), described gaps in her life of days at a time: "I know that one of my other personalities was out there...when we get in the car, depending on what personality has driven...the radio station will be different, the seats and mirrors will have to be readjusted. Once I came back and the car I had was gone and this sports car was in its place."

Brain imaging studies of a multiple similar to Sue revealed the changes in brain function that occur as various personalities come and go. Don Condie, a psychiatrist at the Massachusetts General Hospital in Boston, and neurobiologist Guochuan Tsai at McLean Hospital in Belmont, Massachusetts, found that the arrival of an alter coincided with distinct changes in activity in the hippocampus, the part of the brain that lays down and retrieves personal memories. When her dominant personality was replaced by a weaker alter, hippocampal activity died down, only to flare up again when the main character returned (*Harvard Review of Psychiatry*, vol 7, p 119).

The finding suggests that the weaker alter had access to a smaller "bag" of memories than the stronger one, and that the memories of each were not available to the other (*New Scientist*, 18 December 1999, p 26). Crucially, there was no change in hippocampal activity when simply "acting out" a personality shift.

Dissociative amnesia, or fugue, is another way that losing access to the precious cache of personal memories can split apart a person's "me-ness". The person suddenly adopts a new life, a new name, and sometimes a whole new way of behaving. Their old self seems to be entirely forgotten, though in fact the memories that formed their old identity are merely "dissociated" from consciousness and thus beyond voluntary recall. Often the only evidence that they are still encoded in the brain is when a person acts on them unconsciously. For example, a girl who claimed to have no memory of anything in her past was invited to dial telephone numbers at random. Although she thought she was hitting the buttons blindly, within a few tries she had dialled her own home.

A sense of control over and ownership of your body is another vital element of the self. The normal feeling of inhabiting your own body is produced by a continuous matching up of physical reality and the mental representation or body "schema" held in the brain. If the mental representation is damaged (by a stroke or dementia) or if part of it is dissociated from the rest, the corresponding body part may be disowned. This may manifest as conversion or "hysterical" paralysis, where a person is unable to move a limb despite the absence of any physical injury.

A brain-imaging study carried out at the Radcliffe Infirmary in Oxford of one patient with conversion paralysis showed that the part of the brain that plans movement (the supplementary motor cortex) was not communicating its messages to the part that actually instructs the body to move. So however much the patient "willed" the affected area to move, it just couldn't (*Cognition*, vol 64, p B1).

Ownership may break down in an even stranger way in a phenomenon known as alien hand. Here a limb may act independently of, or against the conscious intentions of, its owner. Alien hands have been known to hit people at the very moment the other hand reaches out to make an affectionate gesture, and to undo their owner's buttons and zips just after the other hand has done them up.

Having a bit of your body beyond conscious control is deeply disturbing because it makes it feel as though that part no longer "belongs" to you. People who are mentally disconnected from part of their body may neglect to use it even when it is not paralysed. Despite incontrovertible evidence, some people have even been known to deny that the disowned limb is attached to them, and others have begged for surgical amputation of body parts that do not fit into their internal sense of self. Some have even managed to persuade surgeons to carry out their wishes.

Similar to feelings of ownership is the sense of agency - the feeling that our actions are dictated by our intentions. People who lose this have a form of dissociation called depersonalisation in which conscious intentions and motor activity are partly decoupled. This creates a feeling of automatism or being "outside" oneself.

Beside herself

Jackie suffered her first bout of depersonalisation when she was walking home from the hospital where her mother had just died. She describes the feeling:

"Of course I felt sad and all that. But it was as though the sadness was 'out there' somewhere, not inside me. And I saw myself walking along and even smiling at a neighbour I met, but I wasn't in there - I was somewhere else. The person walking along was like a puppet or something - empty inside. All the time I was thinking...but the thoughts were like some sort of subtitles or something - they weren't my thoughts."

Other people lose their normal perception of the outside world, a condition known as derealisation. Joe, 24, started suffering bouts of derealisation in his teens. His condition is partly controlled by a drug that reduces anxiety. But he still has periods when the outside world seems strange and unreal:

"It happens most in the evenings, especially if I go somewhere where there are bright lights or lots of noise. Suddenly the whole scene seems to whoosh away from me.

"If I'm talking to someone they may seem as though they are standing on the moon, and I hear them as though their voice is coming down some long tunnel. At other times objects just look weird. I look down and see something like a mug in my hand and it looks like something I've never seen before. And the ends of my arms seem to be miles away. When I'm in this state it feels as though the whole world is some sort of film...I hate it...sometimes I hit my head like you hit a TV set that isn't working properly...but it doesn't clear the picture. It's terrifying."

Most people who experience these states find them disturbing, and they are often associated with odd behaviour - which is why dissociation is usually considered "bad". However, most recreational drugs cause dissociation of one sort or another and those who take them do so precisely to achieve that effect. And dissociation is not itself abnormal - it is simply a reflection of the brain's ability to process information along parallel pathways and at different levels of consciousness. You are dissociating when you get "lost" in a book or find that you've carried out some routine task (driving is the usual example) without being able to remember it. Far from being dysfunctional, this everyday type of dissociation can give the imagination free rein or leave the body to carry out routine tasks while the conscious mind roams elsewhere.

Some tasks may even be carried out more competently as a result of dissociation. A doctor who constantly has to deal with horrifying injuries may need to dissociate emotionally in order to function and not be overwhelmed by pity. Stay in that state after work, however, and it is likely to be disastrous.

But even at the extreme end of the dissociative spectrum, multiple personality, there are those who find the state preferable to "normal" cognition. John and his friends, for example, have no intention of seeking psychiatric help because they like being a group. "We keep each other company and each of us has our own special strengths and weaknesses which we can call on when needed," he says. "We don't want to be 'integrated' - group living makes us stronger, more adaptable...and we are never lonely."

And although most of us take our sense of self for granted, there is probably a great deal more variation out there than we care to consider. Multiple personality is generally assumed to be very rare, at least outside the US. Indeed, some psychiatrists in Europe still refuse to acknowledge that it is a genuine splitting of identity. But two surveys from the early 1990s, one in Winnipeg and the other in the Netherlands and Belgium, of people who were not being treated for a psychiatric disorder found that 3 per cent of the North Americans and 0.5 per cent of the Europeans fulfilled

the current diagnostic criteria for dissociative identity disorder. Yet the number of reported cases worldwide was only a little over 6000.

The prevalence of "milder" forms of dissociative disorder is probably underestimated to an even greater extent. Both the American and European population surveys, using questions such as "Are you able to ignore pain?" or "Are you ever approached by people you don't know who know you?" indicated that around 12 per cent of people dissociated to a degree that most psychiatrists would diagnose as pathological.

Hidden epidemic

Marlene Steinberg of the University of Massachusetts Medical School in Worcester, a therapist who specialises in dissociative disorders, says her own clinical research suggests that 30 million people in North America are afflicted. "Were it not for the fact that so many people who actually have a dissociative disorder are misdiagnosed and mistreated for something else, the reported numbers would skyrocket to reflect their true epidemic proportions," she says.

The reason for this presumed "epidemic" of dissociative disorders is unclear. Steinberg believes that pathological adult dissociation is nearly always linked to childhood abuse. According to this theory, the abused children learn to dissociate as a way of shutting out or distancing themselves from the horrific things that are happening to or around them. Once learned, dissociation becomes a brain "habit" that persists into adult life.

Anthony David, who runs a research clinic specialising in depersonalisation at King's College London's Institute of Psychiatry, explains: "I think that these mechanisms exist in all of us and could be triggered by circumstances." He suggests that people with the conditions probably have an innate physiological vulnerability to react in this way.

Childhood abuse seems to be only one factor. An ongoing Institute of Psychiatry survey has found that only 1 in 3 patients with symptoms of dissociation believed they had suffered abuse as children - a much larger proportion than in the general population, but still a minority. All the respondents, however, claimed to have suffered some sort of stress as children: for example overly strict parenting; a parent who was ill; or losing a family member at a young age. Sadness, loneliness and boredom may also cause a child to shut out the real world and take their conscious mind off to a more pleasing imaginary land. Even overzealous therapy may encourage escape to alternative identities.

In addition, stress of any kind may damage the hippocampus, making it less capable of weaving memories into a coherent whole. A number of studies have found that people who have been in a chronic state of anxiety - war veterans, for example - have a smaller hippocampus than others, and these people are also more likely to report symptoms of dissociation.

Another explanation for the "epidemic" is our increasing use of recreational drugs. Most of these produce some sort of dissociation, and once the brain has been primed by them it may be more likely to dissociate spontaneously. Some 15 per cent of drug users in treatment report spontaneous bouts of derealisation or depersonalisation, or even experience it continuously. Although they may find the experience pleasurable when they are in control, when it happens out of the blue they tend to find it as frightening as anyone else.

The now familiar story about our living a modern life with an ancient brain may help explain our vulnerability to dissociation. The integration of cognitive functions, such as those that create the sense of self, is likely to be quite a new adaptation and thus still fragile. The emotional stressors that people encounter today - during childhood or later in life - may be triggering sensitive brains to revert to a more primitive mode of cognition. John and his friends may not be a bizarre new phenomenon after all, but a throwback to a time when everyone made their own friends - literally.

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