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Journal Item

How to cite:

Owton, Helen (2022). “Oh Shit!” Moments: Motorcycling, “Thrownness,” and the Startle Effect. Cultural Studies Critical Methodologies (Early access).

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Version: Version of Record

Link(s) to article on publisher's website:

<http://dx.doi.org/doi:10.1177/15327086221093952>

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“Oh Shit!” Moments: Motorcycling, “Thrownness,” and the Startle Effect

Cultural Studies ↔ Critical Methodologies
1–7
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DOI: 10.1177/15327086221093952
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Abstract

Through a series of vignettes, this article offers an insight into the intense embodied and sensorial experiences of motorcycling via “sudden moments.” I reflect on the phenomenological interconnectedness of environment and the fragility of the motorcycling body–self via the exploration of “thrownness” and “sudden moments.” These intense embodied moments of “thrownness” can disrupt the feelings of pleasure and enjoyment from being “in the zone.” Surviving the threat, the body may experience a renewed positive heightened corporeal sense of “aliveness,” elation, and relief working at an intense level, with positive effects on one’s mental health.

Keywords

motorcycling, embodiment, startle effect, thrownness, phenomenology

The real cycle you’re working on is a cycle called yourself.
—Pirsig (1991).

“Oh Shit!” Moments

This autumn afternoon, I was riding along a road known as the Rutland TT and I’m on my new motorcycle—a Yamaha MT09. My new black MT09 is a triple cylinder with 890cc and seems to hold much more prowess than my CB500. The size, the weighty feel, the quick shift, and the significant growl are all a reminder of how powerful the new machine is. Along with the upgrade of my machine, I’ve bought items to mitigate the cold chill—a heated jacket, heated grips, and a screen. As I turn my heated jacket on, I feel the warmth wrap a round my upper body and I feel the heated grips start to seep through my gloves in an attempt to reach my fingers. The wind continues to hit my legs and helmet, feeling the resistance as I push my head against it. I can feel unruly streams of wind sneak in through gaps in my helmet brush against my face. In front of me, I watch the traffic drive ahead and judge what type of driver is ahead of me. I remember the time when I was trying to overtake a car and I think he was trying to race me even though I was behind him. People driving fast cars tend to think they are fast, but they’re not as fast as a lot of bikes, especially when you compare the acceleration of bikes. The power output on my bike is about 485 W/kg, whereas something like an Audi Q3 S line is 80 W/kg. As I went to overtake him, he swerved over to the middle of the road to stop me even though there was no one in front of him. Immediately, I brake, pull in

behind him, and just let him speed off. Now, before I overtake, I try and judge the driver ahead of me to avoid the same thing happening again or at least anticipate it. There are quite a few twists, turns, and blind spots on the Rutland TT and it’s known for motorcyclists crashing along the road so extra vigilance is needed when riding along this road. I ride along this road regularly so I’m becoming familiar with the corners as I listen acutely to the engine growl. As I ride out of a quiet village, I twist the throttle, flick my toe up as the bike smoothly changes gear without any clutch interfering with the speed of the acceleration. I feel the rush as the smoothness of the gear changing connects me to the technical ability of the machine. I lean in slightly as I swing round the next corner and am suddenly faced with a van speeding straight toward me on the same side of the road. “Oh shit!” I yell. For a split second, I stare at the van and stop breathing trying to judge the situation as quickly as possible. Instinct makes me release my grip on the throttle which starts slowing me down, then I grab the hand brake and step on the foot brake. I scan the road as swiftly as I can, judging whether the van will pass the car in time for me as I continue to slow down. The van swerves back across the road passing the car and passing me safely on the other side. As the van passes me, I breathe again “fucking hell!” I mutter

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cursing under my breath and gently squeeze the throttle to speed up again. I feel my eyes have widened with the suddenness of hot fear that's trickled through me and the immediacy of surprise and startle that I've just been faced with. By the time I've arrived home, I've recovered from the event, but the embodied memory remains in my sweaty body.

* * *

It is well documented and understood that riding a motorcycle requires a motorcyclist to “anticipate, be cool under pressure, be attuned to a constantly moving environment at speed, and position the body-motorcycle such as riding a ‘racing line’ which positions a rider effectively round a corner” (Owton, 2021, p. 160). This enhancement of sensory processing, increase in focus, and visual attention can increase epinephrine levels, increase heart rate, and decrease cortisol levels demonstrating that riding a motorcycle can replicate the results associated with exercise and the reduction of stress levels (Vaughn et al., 2021). Our bodies judge whether a situation is stressful which is assessed based on sensory input and stored memories (Vaughn et al., 2021). Stress is a biological, psychological, and emotionally embodied response experienced when we perceive a threat under pressure (American Psychological Association [APA], 2018). Stress can be cumulative such that a *stressor* (e.g., acute, event-based, daily, chronic) may be felt as more stressful if you already have a lot of other stressors you are dealing with (Epel et al., 2018). A *stressor* is the stimulus which appears to trigger the experience of stress (e.g., heavy traffic, a car pulling out in front, an injury, running late for an appointment, a divorce, bereavement, moving to a new house, losing a job). A stressor can affect a person even without that person being aware of the stressor which might be more common than we think, particularly when this stressor is a frequent occurrence. Our bodies are well equipped and prepared for dealing with stress in small doses, and sudden and severe stress generates the following bodily responses: (a) increase in heart rate, (b) increase in breathing, (c) decrease in digestive activity, and (d) liver released glucose for energy (APA, 2018). While motorcyclists have been labeled as “sensation seekers” (Zuckerman, 2007) and anticipate that they might face dangers and fears, they are not irresponsible risk takers with a death wish (Brymer & Schweitzer, 2013; Owton, 2021). Motorcyclists, like others engaging in extreme sports, face intense moments, recognize that it is not always possible to control the future, and move through fears to participate fully in the action (Brymer & Schweitzer, 2013).

If a situation is judged as negatively stressful, the hypothalamus is activated which is situated in the center of the brain and is responsible for maintaining a balanced bodily state. This is the branch of the brain which is highly responsive to stress which is the *autonomic nervous system* (ANS)

where most of the communication is automatic and unconscious. The goal of the ANS is to maintain homeostasis, and it does so by utilizing its two subsystems—the *sympathetic nervous system* and the *parasympathetic nervous system* (Waxenbaum et al., 2021). If a stress response is triggered, it sends signals to the connected structures between the endocrine and nervous systems: the pituitary gland and the adrenal medulla (Waxenbaum et al., 2021). Acute or short-term stress elicits a “fight or flight” response via the sympathomedullary (SAM) pathway or Sympathetic Nervous System, whereas long-term or chronic stress is regulated by the Hypothalamic–Pituitary–Adrenal (HPA) system or Parasympathetic Nervous System (Cannon, 1932). Acute stress is something that is threatening, sudden, and typically short-lived, like being faced with a vehicle on the wrong side of the road, whereas chronic stress is a stressor that is an ongoing environmental demand. Motorcyclists are often faced with moments of acute stress, where the hypothalamus activates the sympathetic branch of the ANS and then signals the adrenal medulla to secrete hormones called adrenaline and noradrenaline. This release of adrenaline produces changes in the body such as increase sweating, heart rate, and blood pressure, and a reduction in digestion. This release of adrenaline, known as an “adrenaline rush,” signifies an intense sensory experience. This results in oxygen being pumped quickly to the muscles in preparation for action to respond to the threat. Once the threat has gone, the parasympathetic branch (rest and digest) takes over and brings the body back to a balanced state. An individual's response to acute or chronic stress, however, can be determined by numerous factors (e.g., genetics, early life experience, environmental conditions, sex, and age; Herman et al., 1999).

Sudden, unexpected, and intense moments may mean experiencing a sense of “thrownness” (*geworfenheit*)—feelings associated with a human's individual existence of the world as being “thrown” (Dahlstrom, 2013; Heidegger, 1962). In a sense, the mind–body–self is thrown into the position of needing to take responsibility—a responsibility to ground our respective *being-in-the-world* without feeling responsible for being in this position (Dahlstrom, 2013). An instinctive physiological response to a threatening situation was coined by Canon in the early 1920s, “fight or flight.” Fight is the tendency to resist forcibly, whereas flight responses involve wanting to run away or flee from the event (Lang, 1994; Schmidt et al., 2008). There have been developments, however, to a multitude of responses which includes a “freeze” response (Barlow, 2002; Schmidt et al., 2008) that may occur in some threatening situations. Furthermore, LaConte (2017) suggests that “facing” the problem directly draws upon an assertive response and is the most effective way of mitigating the fear. In aviation, the concept of surprise and “startle effect” has been drawn

upon to describe a stress response to a sudden, intense, and unexpected stimulus; however, not all unexpected stimuli may lead to a negative stress response or produce an overtly physiological and emotional reaction. Indeed, senses act together “in concert to help give us our embodied perceptions of space” (Paterson, 2009, p. 736). Motorcyclists must respond to threatening situations on a daily basis, and perspectives of embodied learning through the sensuous body–self can develop the skills of motorcycling (Owton, 2021).

Autoethnography and the Phenomenology of the Body

There could be a merging and shifting between responses because “one can develop an attuned awareness to the environment and an interconnected attachment to the motorcycle” (Owton, 2021, p. 157). While Owton (2021) demonstrated that intense feelings of pleasure and “flow” (Csikszentmihályi, 1997, 2002) means that one may not be able to attend to other things apart from the bodily “here and now”—this may also be true when experiencing intense feelings of fear; the mind–body–self is, in a sense, startled and thrown into the unknown (Heidegger, 1962; Merleau-Ponty, 1962). In an attempt to “bring the body back in” (Allen-Collinson, 2009, p. 279), I take a phenomenologically inspired approach to address the lack of autoethnographic and embodied research on motorcycling (Anderson & Austin, 2012; Austin, 2010; Wiggen, 2019), and more specifically women’s motorcycling (Owton, 2021). Understanding that the physiological is always intertwined with the body’s intentionality is central to bringing the body back in: Consciousness is always consciousness of something, and thus intentional—always directed toward something (Allen-Collinson, 2009; Leder, 2001; Merleau-Ponty, 2001). For further examples of Merleau-Ponty’s existential approach and the concept of intentionality, see Allen-Collinson (2011). As noted in Owton’s (2021) research, during intense embodied moments is when the body may *eu*-appear and may not necessarily result in uneasiness, distress, or alienation but where one can attend to her or his body as something positive (Leder, 1990). During these intense moments, it is important to understand the body–self to develop specific proficiency of motorcycling via positive embodied learning experiences. Indeed, stress may not necessarily be negative, and the term *eustress* represents the positive side of stress (Quick et al., 2004). The feeling of *eustress* is similar to a “runner’s high” or being “in the zone” whereby time is suspended, and the person is fully absorbed in the task (Quick et al., 2004). I argue that these intense moments should be understood in the context of the motorcyclist’s existential grasp of the world (Leder, 2001; Merleau-Ponty, 1962). Indeed, motorcyclists must learn how to contend with environmental aspects to ride effectively and

(as far as possible) avoid incurring injury or collision (Allen et al., 2019; Owton, 2021). I reflect on the interconnectedness of environment, motorcycle, and body, and attempt to capture something of the phenomenology of motorcycling via the fragility of the motorcycling body “in ways that preserve the visceral, connected, proximal and immediate nature of embodied experience” (Carless & Douglas, 2016, p. 55).

The Research Project

I completed my license in August 2020 and have purchased three motorcycles: (a) Kawasaki ER-5 (2002), (b) Honda CB500F (2015), and (c) Yamaha MT09 (2021). I purchased my first motorcycle in May 2020 and have kept a detailed research log with an initial aim to become a woman who rides a motorcycle, participate on the track as a “test of experience” (see Owton, 2021), and develop advanced skills to avoid injury or collision on the road. I rode while keeping very detailed and critical field notes in personal logs and reflective journals (Smith and Sparkes, 2016). I reflect on the interconnectedness of environment, motorcycle, and mind–body–self that is commensurate with Merleau-Ponty’s (1969) interpretation of how an individual opens one’s senses to the world. Similarly, to my previous auto-ethnographical accounts (Owton, 2015, 2021), I attempt to portray lived, corporeal experiences of motorcycling through a series of vignettes involving sudden and intense moments of startle.

Tank Slapper

The day is dull, cloudy, and damp so what better thing to do than to go out on my motorcycle. I’m following a friend of mine who’s much more experienced than me, so I feel a bit of reassurance. I’m improving but I still need to build confidence since passing my test a few months ago. I feel the rain start to descend on us and my body starts tensing up and I’m not used to riding in the rain. I’m well equipped with armor and textile clothing, but my body starts to shiver slightly with the wet coldness seeping through the gaps. We decide to turn around and head back because it’s not as fun riding in the rain. I concentrate on the U-turn, which is up a hill, focusing on balancing the bike through my body. I take my time, ride slowly, and have my feet ready to catch the bike if I lose my balance. I feel my mind working hard to turn up the hill and remain balanced. As I turn successfully, I twist the throttle and accelerate up the hill. Suddenly, my motorcycle wobbles violently beneath me! My legs lose grip as the tank slips side to side underneath me, like a snake slithering along the grass. The handlebars fluctuate wildly. I have no time to react. The surprise stuns me and my body is frozen not knowing what the motorcycle is doing. In a moment, in a split second I’m out of control and

the next I'm riding steady. I realize I must have ridden along what's known as a "tar snake," the dark sealant between two parts of the tarmac which become slippery when wet. I experienced what's known as a "tank slapper" where the motorcycle wobbles side to side and the handlebars oscillate wildly. I feel my body respond afterward; the fear, the surprise, the shock, the elation is like wave of emotions sweating through me with relief. "Shit! What the fuck . . .? I'm OK!" I say over the intercom as I feel my heart racing with excitement and hot feelings of adrenaline trickle through my body. I laugh with the elation that I'm OK and remember the number of times I've nearly fallen off my bicycle. *Not* reacting or tightening my grip on the handlebars was the best thing to do; letting the motorcycle move, letting go of control is how to survive a tank slapper.

* * *

This brief and sudden experience can be understood through feelings of "thrownness" and "intense embodiment" which describes "periods of heightened awareness of corporeal existence" which can denote a form of disappearance or "a positively heightened sense of corporeal 'aliveness,' of the sense working at an intense level" (Allen-Collinson & Owton, 2015, p. 247; Leder, 2001; Merleau-Ponty, 1962). Of note is the feeling of surprise which arises when we experience unexpected sounds or, in this case, movements, or something sudden where we feel a sense of astonishment, wonder, fear, or amazement. Horstmann (2006) argues that surprise is a consequence resulting from a disparity between the expectations of a person and what they might have perceived to happen. Out of all the emotions (fear, anger, joy, sadness, disgust, contempt, and surprise), it is the briefest of all the emotions and has a fixed, limited duration (APA, 2022). Its function is to focus our attention on determining what is happening and to assess whether this situation is dangerous or not (Paul Ekman Group, 2021). Physiological responses to surprise may include changes to multiple systems in the body (e.g., heart rate, blood pressure, and breathing increases; Rivera et al., 2014). Responses to surprise can lead to performance decrements (e.g., action delays, increased error rate, and deterioration of conscious perception and memory) as well as an attentional shift interrupting the ongoing processes of a parallel task (Reisenzein et al., 2019). In this sense, the attentional system becomes more focused and impairs the working memory (Martin et al., 2016). While the focus can help to evaluate the situation, people can tend to focus on the most prominent information, which may not be the most helpful or significant information at that time (Rivera et al., 2014; Sapolsky, 1994). This feeling of being suddenly thrown into the unfamiliar in a split second, the combination of the impaired working memory together with this tunneled focus, may also lead to problems for the

person experiencing surprise on their main tasks (Martin et al., 2016). In this way, surprise as a feeling can be positive or negative and tends to vary with the importance of the outcome as well as the beliefs about the outcome (Ekman et al., 1985). For a motorcyclist, the feeling of surprise might be something that violates a motorcyclist's expectations which elicits feelings of "thrownness." During these intense embodied moments is when the body may *eu*-appear; where one can attend to her or his body as something positive and that this attention may not result in discomfort or alienation (Leder, 1990). For example, a motorcycle may experience a technical failure and the beliefs about the outcome of this failure may be a positive or negative feeling which can shape the experience of other emotions. Whereas surprise is a feeling that arises when something is unexpected, startle is a physical reflex that can be experienced regardless of whether the individual is expecting it. Through learning to ride a motorcycle, one can develop an attuned awareness to the environment, to our bodily senses that inform our perception and of "inside" and "outside," of inner and outer space and an interconnected attachment to the motorcycle while experiencing intense feelings (positive or negative; Paterson, 2009).

Scramble: He didn't See Me

We stopped at a petrol station and then pulled into the parking spots to pay. I was concentrating on rolling backward and then stopped in a position to start my motorcycle. My friend starts his motorcycle and rides to the line waiting for me to join him. I check that I have everything ready, gloves, heated jacket plugged in and stand up. I notice an old couple get into their car and he starts up his Volvo hatchback. Just as I'm about to start up and head toward my friend, the car to my left starts reversing. He hasn't seen me there and continues rolling backward. "Wo, wo, wo . . . Shit!" I say with nobody to hear me through my helmet. I start beeping my horn, but he continues rolling back as I can see he's going to hit me if I don't do anything else. I have to force myself to shift my attention from their actions to my actions. I shuffle my legs to move my motorcycle backward desperate scrambling the floor for grip and maintaining my balance. I breathe forcefully as I use all my strength to get me out of the way of the reversing car. All I can think about is not being hit and my attention is focused solely on surviving. He misses me by inches as he blindly reverses past me, shifts gears, and drives out past my friend. My friend waves at him to try and tell him what he did, but he ignores him and drives off. "Idiot!" I hear from a man beside me, shaking his head, walking past as he looks at the car driving off. I let out a breath of relief and am able to think clearly again and feel my body start to relax from the immediate tension. I turn on my intercom and hear my

friend ask, “Are you OK?” I answer, “Yeah, he just didn’t see me at all!”

* * *

Startle Effect

U.K. statistics report that “driver or rider failed to look properly” was the most common reason for accidents, and while it should be unsurprising, the event is still startling and surprising at that moment in time. When an individual’s existence of the world is suddenly “thrown” into an intense moment, this could elicit a feeling of being startled. The startle reflex is an uncontrollable and automatic response to a sudden, intense stimulus (Field et al., 2015) which is accompanied by an emotional component influencing how an individual might respond to the unexpected stimulus (Lang et al., 1990).

Essentially, it is due to an intense event that violates a motorcyclist’s expectations where they are thrown toward a threat to survival. This intense stimulus triggers an involuntary physiological reflex, such as muscular tension and an increased heart rate. The latter are necessary to prepare the body for the action response (Field et al., 2015; Koch, 1999). The startle effect is also known as the “Amygdala Hijack” because the amygdala is central to the startle response (Goleman, 1996). The amygdala is a structure in the limbic system that is involved directly with motivation, particularly related to survival and our emotions (Goleman, 1996). It is also responsible for processing emotions such as fear, pleasure, and anger. As mentioned earlier, the hypothalamus is triggered if there is a stress stimulus which almost immediately sends signals to the amygdala that will trigger a first response to the possible danger through the body (Goleman, 1996; LeDoux, 1994, 1995). As demonstrated above, this evokes an immediacy of attentional focus and actions needed toward the task of surviving. Signals sent to the amygdala may induce the startle reflex, while these same signals will be sent to the sensory cortex for cognitive processing (Martin et al., 2016). The speed at which this is processed provides humans with the means of reacting very quickly to a threat but can produce a multitude of false alarms. This process is suggested as the “quick and dirty” pathway (LeDoux, 1994, 1995). The other way the brain processes startling stimulus is in the neocortex pathway which is a slower process but processes the information more deeply. Here, the thalamus simultaneously sends a signal to the neocortex where it is further analyzed, and a result is found from the analysis whether the threat is dangerous and immediate action is necessary, or that this is a false alarm and action is not required (Field et al., 2015; Martin et al., 2016).

Essentially, during a threatening situation, part of the stimuli goes directly to the amygdala “emotional/irrational

brain,” while the other parts are sent to the neocortex “thinking/rational brain” (Goleman, 1996). This can lead to a potential battle between the “rational” part of the brain and the “irrational” part of the brain which could freeze the body into inaction (LeDoux, 1994, 1995). The amygdala, however, can process the information milliseconds quicker than the neocortex which can be why someone might act irrationally and destructively before processing the threat appropriately (LeDoux, 1994, 1995); an amygdala hijack exhibits three signs: strong emotional reaction, sudden onset, and post-episode realization if the reaction was inappropriate (Goleman, 1996). The thalamus can bypass the cortex which means that emotional reactions and responses can be formed without any conscious or cognitive participation with the amygdala acting completely independently of the neocortex (Goleman, 1996). Something like “corner rush” that motorcyclists experience can elicit a startle response. In the following example, I know the corner is coming, but the speed at which I reach the corner startles me:

On about lap 5, I’m speeding down the straight and lose focus for a second, I experience “corner rush” and quickly brake as I feel the motorcycle wobble erratically before turning into the bend; I stare at the grass ahead but force myself to release the brake and throw it in, saving it—just a few breathless moments. (Owton, 2021, p. 159)

* * *

Indeed, even though startle and surprise often occur together, the startle reflex can be triggered without the notion of surprise (Ekman et al., 1985). For example, a runner may know the bang of a gun is going to sound, but the runner will usually still have a startle reflex resulting from the gun sound. Muscular activity can be inhibited by startle and a person may stop what they were doing, for example, freeze (Koch, 1999). This disruption can last from 100 ms to 3 s for basic tasks and up to 10 s for more complex motor tasks (Rivera et al., 2014). Cognitive processing, decision making, and problem solving can be impaired between 30 and 60 s and increase as tasks become more complex (Rivera et al., 2014). Additional cognitive responses include the following: confusion, loss of situational awareness, disorientation, impairment of working memory, and impairment of problem solving and decision making (Field et al., 2015). Pilots are exposed to surprise and startle during training so they can cognitively develop ways to adapt. While swerving round a cone and emergency stops are techniques used on motorcycle training courses to prepare motorcyclists for the unexpected, new motorcyclists may also benefit from surprise and startle training on courses, particularly those who haven’t had much experience driving on the roads. Since 2004, fatalities have decreased by 51%, and resilience training for motorcyclists could reduce

the number of fatalities on the road even more (Department of Transport, 2020). Exposure to intense moments might act as a buffer against future moments as well as against stresses of life (“Sensation-Seeking,” 2021). It is essential for those involved in extreme sports to make choices to reduce risk and enhance personal control (Crust et al., 2019).

These vignettes provide an insight into the ways motorcyclists may respond when faced with threatening situations. They show the multisensory and (hyper)vigilant experience of riding on the road negotiating a continually unfolding environment as the motorcycle and I become intercorporeally enmeshed and attuned to potential threats. While motorcyclists must be attuned to the senses, reading movements in the traffic, listen to sounds of engines, understanding our own levels of competency (Owton, 2021), we must be prepared for the unexpected where we could be thrown toward threatening situations where we are startled into inaction or the “wrong” action. When a threat to survival, being thrown into a motorcyclist’s existential view of the world, a rider can become startled, and the sensorial experience intensifies as one’s attention shifts to focusing on surviving. Intense feelings of pleasure or fear means that one may not be able to attend to other things apart from the bodily “here and now” (Owton, 2021). One needs to take responsibility for one’s own existence in the world and, in this sense, survival. Once this intense moment has passed successfully, relief and recovery may be experienced from the threat that released the adrenaline rush. These sudden and intense embodied moments of “throwness” can disrupt the feelings of pleasure and enjoyment from being “in the zone,” where the body might dys-appear momentarily. When successfully surviving the threat, the body may experience a renewed positive heightened corporeal sense of “aliveness,” elation, and relief working at an intense level. Working at this level of intensity has been shown to have positive effects on one’s mental health (Csikszentmihályi, 2002).

Motorcycling involves high risks when riding on the track or on the road, but it is much more than seeking an adrenaline rush. There is a sense of belonging to a way of life, and there are hidden codes of knowing between riders; nods indicate we acknowledge these risks but recognize the sense of aliveness (Owton, 2021). Riding a motorcycle not only provides an individual with a project that extends part of oneself telling stories where emotional connections occur but can improve one’s mental health biologically, psychologically, and socially (Brymer & Schweitzer, 2013; Pirsig, 1991; Vaughn et al., 2021). While risks are attached in the pursuit of cultivating a sensuous self, new adventures where one can successfully survive a threat can nurture mental health through feelings of joy, accomplishment, assurance, and resilience providing an opportunity to grow and expand one’s sense of self. I continue to pursue my newly forming sensuous self by exploring intense experiences via autoethnographic accounts (Allen-Collinson & Owton, 2015;

Owton, 2012, 2015, 2021). This self-transformation characterized by self-reinvention and metaphorical rebirth (Frank, 1995/2013), which is never complete, involves a demanding process of adaptation as I continue to engage, persevere, embrace the unknown, and face fears while learning to ride a motorcycle.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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