

CRISTA CRITTENDEN



**UNDERSTANDING
HEALTH PSYCHOLOGY
THROUGH THE WORKS
OF STEPHEN KING**

Getting Under Your Skin



Understanding Health Psychology Through the Works of Stephen King

Not just your regular textbook, this unique book uses popular culture as a teaching tool by taking the work of Stephen King, America's top horror writer, to illustrate concepts that are essential to health psychology. This book uses his storytelling and character development to illustrate the science of how psychology "gets under the skin" to impact physical health. It examines the history of health psychology and the biopsychosocial perspective, the biology of stress and emotion, the science of behavior change, structural (social) influences on health, personality and sleep science, the role of psychology in disease, and the evidence of the mind-body connection.

This book provides definitions of many health psychology concepts and uses the works of Stephen King to couch them in an easy-to-understand context. The intrinsic enjoyment of relating to a popular fiction writer is used to present the most recent research in the field, including work in the neuroscience of health psychology and the science of intervention. From explorations of the placebo and nocebo effects in *Holly* and *Thinner*, to the socioecological impacts on health in *The Running Man* and the power of adverse childhood experiences in *The Body*, this book provides a wide-reaching overview of health psychology that can provide context for psychology students as well as student engagement opportunities.

Accompanied by supplementary teaching materials, this engaging read is designed to motivate undergraduate health psychology students and educators. It is also intended for King's Constant Readers – those who can't get enough of the world of Stephen King.

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Crista Crittenden

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Thank you to Sheldon Cohen for the facts and Stephen King for the fiction.



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Preface

Thank you so much for picking up this book – I hope that you found the title intriguing and are here to get some learning! As far as I can see, this book has three main audiences: those who want to learn about health psychology, those who want to teach health psychology, and Constant Readers.

Those Who Want to Learn about Health Psychology

At some point, I was an undergraduate student taking an intro to health psychology course, learning about these concepts for the first time. Then I was a graduate student learning to become an expert in these topics. This book was written with all levels of learning in mind. It provides the foundational material for understanding health psychology as well as some more specific and thought-provoking material for those going beyond the basics. No matter what level you are approaching it with, I hope that you find Stephen King’s framework fun and engaging and that it keeps you on your toes! The point is to learn the material and apply it in ways that might not be apparent in a simple Health Psych 101 course.

Those Who Want to Teach Health Psychology

No matter what subject you teach, teaching is getting harder with each passing semester. The hot topic on campuses throughout the world these past few years has, of course, been artificial intelligence (AI). How ChatGPT and the like make our roles as instructors, who are trying to encourage independent thought and critical analysis, more difficult (or easier, as some may argue) has been on everyone’s mind. One of the main motivations for this out-of-the-box textbook is that we can approach health psychology in a way that may not be easily replicated by large language models (LLMs), so that students can truly put their own thinking and understanding to the test. At the end of each chapter, instructors will find assignment questions that involve critical thinking about Stephen King’s books, movies, and TV shows and applying them to health psychology. It is hoped that this approach will make students more intrinsically (and entertainingly) motivated to do their own work and research and thus take more from health psychology than a general textbook would allow. And I hope it is fun for the instructors as well!

Constant Readers

If you are a Constant Reader, then you know what I am referring to, and nothing more needs to be said. For those of you who don't know, "Constant Readers" is how Stephen King refers to those whom he believes are consistently reading his books. He has an amazingly large and wide-reaching fanbase. It covers those who love movies like *The Shawshank Redemption* and *Stand By Me* to those who may devour Marvel Comics' *The Stand*, to those who read each and every King's book on the day it is released. Some Constant Readers, like me, may be late to the party, but are ready to soak up all things King to make up for the time they have missed. This book is for all Constant Readers or soon-to-be Constant Readers. I hope it brings a new level to your enjoyment of King's work, so that you may rediscover some of your old favorites and appreciate the new works to come.

A Note about Spoilers

Whenever I am addressing a certain work by Stephen King, I provide a very limited summary – so that those who have never read the book, or those who haven't read it in a while, understand or remember the basic premise and characters. As best I could, I tried to leave out spoilers – I would hate to be the person who ruined a key surprise or discovery for you! Unfortunately, some of my discussions about health psychology concepts revolve around key plot points, and you may experience a spoiler or two. So please proceed with caution!

Acknowledgments

I just want to give a quick shout out to my social support systems and the people who provide me with my healthy levels of social integrations (please read this book to find out more!). First, thanks to the advising queens of psychology – you know who you are. Thanks of course to my transglobal friend groups – the Swissvale Opera Club of Pittsburgh and the Hibachi Brunch Club of Doha – I love you all. I could never be where I am today without the unconditional love and support of my mom – you have given me everything I needed to live an amazing life. And while all of those mentioned above have put up with so much during the writing of this book, the person who put up with the most was my husband. Husband – I apologize for all you had to suffer through as I wrote and I wrote. You are the best – don't ever forget that my life is immeasurably better with you in it.

Acronyms and Abbreviations

ACC – Anterior Cingulate Cortex
ACE – Adverse Childhood Experience
ACTH – Adrenocorticotrophic Hormone
ADHD – Attention-Deficit/Hyperactivity Disorder
ANS – Autonomic Nervous System
APC – Antigen-Presenting Cell
APS – American Psychosomatic Society
AUD – Alcohol Use Disorder
BMI – Body Mass Index
BP – Blood Pressure
CAR – Cortisol Awakening Response
CBT – Cognitive Behavioral Therapy
CBT-I – Cognitive Behavioral Therapy for Insomnia
CHD – Coronary Heart Disease
CNS – Central Nervous System
CR – Conditioned Response
CS – Conditioned Stimulus
CRH – Corticotropin-Releasing Hormone
CRP – C-Reactive Protein
CVD – Cardiovascular Disease
DSM – *Diagnostic and Statistical Manual of Mental Disorders*
DV – Dependent Variable
DZ – Dizygotic
ENS – Enteric Nervous System
ESWS – End-Systolic Wall Stress
ETS – Environmental Tobacco Smoke
GSR – Galvanic Skin Response
HBM – Health Belief Model
HPA – Hypothalamic-Pituitary-Adrenal
HR – Heart Rate
IQ – Intelligence Quotient
IV – Independent Variable

LEO – Law Enforcement Officer
MDD – Major Depressive Disorder
MZ – Monozygotic
NREM – Non-Rapid Eye Movement
NS – Neutral Stimulus
PCS3 – Pittsburgh Cold Study 3
PEFR – Peak Expiratory Flow Rate
PMBC – Pittsburgh Mind-Body Center
PNI – Psychoneuroimmunology
PNS – Peripheral Nervous System
PSS – Perceived Stress Scale
PTSD – Post-Traumatic Stress Disorder
RCT – Randomized Controlled Trial
REM – Rapid Eye Movement
SAM – Sympatho-Adrenal-Medullary
SBSM – Society for Biopsychosocial Science and Medicine
SCN – Suprachiasmatic Nucleus
SES – Socioeconomic Status
SI – Social Integration
SK – Stephen King
SNS – Sympathetic Nervous System
SUD – Substance Use Disorder
SWS – Slow Wave Sleep
TCM – Takotsubo Cardiomyopathy
TPB – Theory of Planned Behavior
TTM – Transtheoretical Model
UR – Unconditioned Response
US – Unconditioned Stimulus
VTA – Ventral Tegmental Area
WHO – World Health Organization

1 Getting Under Your Skin

A Shining Introduction

My Introduction to Stephen King

Many of you reading this might have once been like me, or maybe you still are – a pompous jerk. That is, you stuck your nose up at Stephen King. When I was in my teens and twenties, I refused to read Stephen King. It was all too “plebeian.” Give me your Hemingways, your Garcia-Marquezes, your Atwoods. But PLEASE – Stephen King? Never. I wish I could go back and kick my own butt, but alas, time travel eludes us. How many hours of pleasurable reading did I miss? Let us not dwell – let us just appreciate that we are here now and that we recognize that Stephen King is so much more than just a popular horror writer. In fact, he may be the key to helping us learn about and understand the field of health psychology.

I first got over myself when I was in graduate school, getting my PhD in psychology at Carnegie Mellon University in Pittsburgh, Pennsylvania. It was my last year in a five-and-a-half-year sentence, and I was desperately trying to finish my dissertation. My dissertation was meant to be a culmination of everything I had learned about health psychology over half a decade of study. Things were not going well. Everything distracted me, everything was an excuse to not work on the one thing that would get me out of the purgatory of a PhD program. Recognizing that I needed a distraction-free environment, I rashly decided to book a few nights at the Holiday Inn in downtown Johnstown, PA, a little less than two hours away from Pittsburgh. Here, I could just devote the distraction-free time I needed to write.

For those of you who don't know, Johnstown is the location of one of the biggest man-made disasters in the United States – the Johnstown flood. In 1889, the South Fork Dam broke, flooding Johnstown and killing over 2,000 people.¹ I will spare you the details, but just say it is unclear whether the city ever got over the disaster, and it seems haunted by events of the past. Some of you may be starting to see where I am going with this.

While struggling with my dissertation alone in my hotel room, I decided it would be a good idea to take periodic breaks to read something completely unrelated to the work I was doing. Why did I pick this point in my life to finally pick up a Stephen King book? I have no idea. I have the sneaking suspicion it had something to do with the book being about a struggling writer holed up in a haunted hotel. Yes, I decided to start reading *The Shining* (see summary Box 1.1).

 [Spoiler Alert]

Box 1.1 *The Shining*

After *Carrie* and *Salem's Lot* came King's third novel, *The Shining*. The "shining" itself refers to the psychic powers experienced by Danny Torrence, the five-year-old son of Jack Torrence, whom the book is focused on. When we meet Jack at the beginning of the book, he is having a hard go of it. He has recently been let go from his job as an English teacher at a pretty posh New England school, after his explosive temper had led him to assault a student. He is also trying to write a play, as well as hang on to his sobriety, and is struggling with both. In need of money and time to work on the play, he accepts the position of winter caretaker at the Overlook Hotel, high in the mountains of Colorado.

Despite the suggestions of the hotel manager to not bring his family, Jack decides to bring his wife, Wendy, and son, Danny, to spend the long, secluded winter months with him at the Overlook. For approximately six months, it will be just the three of them, living in the mostly snowed-in hotel, with the main goal being to keep the furnace going in rotating sections of the hotel so that the pipes don't freeze.

Sounds easy, right? The hotel chef, Dick Halloran, has made sure they have more than enough food to hold them over for the winter. He has also made sure that Danny, who has the same "shine" that Dick has, knows to watch out for the hotel and to use his psychic abilities should Danny find himself in trouble. Dick leaves the Torrences behind, off to a sweet winter gig in Florida. But of course, he has misgivings, as he has come to believe that the Overlook is haunted.

It is not just the hotel that is haunted – Jack Torrence is haunted as well. Haunted with the memories of his childhood, his early successes as a writer, his hard-drinking days, and the bursts of anger that have led him to move his entire family to a secluded hotel. As the winter closes in, Jack starts to feel the pressure – the pressure of completing his play, of caring for his family, of staying sober, and of dealing with the Overlook and its many needs and demands.

And the hotel does indeed start to get demanding. The hotel has a sordid history, with deaths abounding – from gangsters to heiresses to the previous caretaker and his family. It now seems that those departed do the work of the hotel, and the hotel wants Danny. Danny has powerful abilities to read minds, see the future, and understand others more than they understand themselves. Danny is strong, and so is his mom, so the hotel has chosen Jack to be its conduit to Danny. The hotel, sensing Jack's weaknesses, plies him with booze and accolades, and he becomes the hand by which the hotel works.

Unfortunately for Danny and Wendy, what the hotel wants Jack to do is kill them, specifically with a roque (croquet-like) mallet. Sensing the trouble,

Danny screams down the psychic pipeline to Dick in Florida, begging him to come and help. As Jack becomes progressively more violent, Danny and Wendy fight in any way they can, recognizing that the man chasing them through the hotel is no longer their husband and father, but some manifestation of the evil of the hotel.

Things get pretty desperate once Jack critically injures Wendy and sets his sights on Danny. After a perilous journey from Florida in which universal forces tried to stop Dick from getting to the hotel, he arrives at a gruesome scene of Wendy bleeding and broken, and Danny being pursued by his dad, who, in all actuality, should be dead given his injuries from his fight with Wendy. In a last moment of fight and clarity, Jack tells Danny to get out of the hotel. Danny also remembers that his dad has not done his most important caretaking duty – relieving the pressure of the basement boiler, and the hotel is probably going to blow. Danny finds his mom and Dick, and they get out just in time to watch the hotel – and Jack Torrence – go up in flames.

On the second night of my Holiday Inn stay, I was getting far into the book (and not so far into my dissertation). And I was getting scared. I mean more scared than I have ever been. I could feel my body experiencing the sympathetic nervous system activation we associate with “fight or flight.” I could feel my blood pressure increasing, and my face felt red. My palms began to sweat. I could feel my heart racing – it was telling me to make sure I locked the hotel door – for the 20th time. The door was locked! I wasn’t in any danger. But my body was reacting as if survival was not a foregone conclusion of my weekend at the Johnstown Holiday Inn.

How was Stephen King able to get under my skin and cause such a strong biological reaction? It was just a book – words on a piece of paper. Words that were written over 30 years ago, at that! Yet there I was, deep in it. It was then that I realized Stephen King was not just a horror writer – he was a person who could elicit emotions and influence my psychological state in such a way that I could biologically change. His work, and what he is able to do with his words, is the embodiment of the ideas of health psychology.

What Is Health Psychology?

Health psychology, as will be discussed in this book, is the scientific endeavor of connecting psychology to physical health. More specifically, it focuses on the biopsychosocial model of health and illness. The biopsychosocial model says we need to not just focus on the physical or biological components of our health but also look at the psychological and social factors that are at play. The biopsychosocial model is attributed to the work of George Engel at my undergraduate and graduate alma mater, the University of Rochester (Go Yellowjackets!). The idea of the biopsychosocial model is in sharp contrast to the biomedical model, which we will discuss more about in Chapter 2. What you need to know at this point is that

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the biomedical model says that health is of the body only, whereas the biopsychosocial model says that health is of the body and mind. And this is where Stephen King comes into the picture.

Box 1.2 What Is Health?

We keep speaking of health, but what does it actually mean? For the purposes of this book, we will use the World Health Organization (WHO)'s definition, which was part of the organization's constitution, adopted in 1946: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). In other words, being healthy is not just about not being sick but also about how you are thriving beyond the physical domain into the psychological and social aspects of your life. This fits quite nicely into the goals of health psychology and the framework of the biopsychosocial model.

Stephen King Gets Under My Skin

"Getting under the skin" is a phrase commonly used by health psychologists as an easy shorthand way of saying that a psychological or social experience has actually caused changes to the underlying structure of the human body. Just a very brief search of Google Scholar brings up several health psychology papers over the last few years that stress the adage. For example:

"Can poverty get under your skin? Basal cortisol levels and cognitive function in children from low and high socioeconomic status." (Lupien et al., 2001)

"How stress gets under the skin: cortisol and stress reactivity in psoriasis." (Evers et al., 2010)

"Under the skin: Using theories from biology and the social sciences to explore the mechanisms behind the black–white health gap." (Green et al., 2010)

"Brain on stress: how the social environment gets under the skin." (McEwen, 2012)

"Does attachment get under the skin? Adult romantic attachment and cortisol responses to stress." (Pietromonaco et al., 2013)

"How socioeconomic disadvantages get under the skin and into the brain to influence health development across the lifespan." (Kim et al., 2017)

"Getting under the skin: Children's health disparities as embodiment of social class." (Kramer et al., 2017)

"Getting under the skin: the association between social isolation and inflammatory markers." (Cudjoe et al., 2020)

"Getting under the skin: long-term links of adolescent peer relationship difficulties to adult vagal tone." (Allen et al., 2022)

And on and on and on. I suppose we can now add this book to the ever growing "Under the Skin" titles. But it is apt, as Stephen King really did get under my skin

as I was reading *The Shining* alone in that hotel room. Simple words on a page had my heart racing like I was running a sprint and my body sweating like I had a high fever. How this happens, how it connects to health, and how we can use it to improve health are the focus of health psychology.

Health Psychology and *The Shining*

Just to give you a better and more specific view of what we are talking about in terms of health psychology, I want to give you a few examples of health psychology from *The Shining*. But first, just a quick aside. We cannot talk about any of this without first talking about the nervous system (see Figure 1.1). The nervous system is involved in all of our day-to-day activities. It includes our brain, our spinal cord, and all the nerves that extend out to the rest of our body. The brain and the spinal cord are called the central nervous system (CNS), and the peripheral nervous system (PNS) refers to those nerves that communicate with the rest of the body.

Let's start with the PNS, which itself is divided into the somatic nervous system and the autonomic nervous system (ANS). The somatic nervous system deals with activity that is voluntary – that is, we know the ways in which we want to move. For example, when Jack Torrence decides to pick up the roque mallet, he is using his somatic nervous system to send motor instructions from his CNS to the somatic periphery to make his muscles move.

As a whole, health psychology is not as interested in the somatic – getting under the skin implies something that is beyond the person's control. Thus, we spend much more time looking at the ANS. The ANS deals with involuntary actions – the

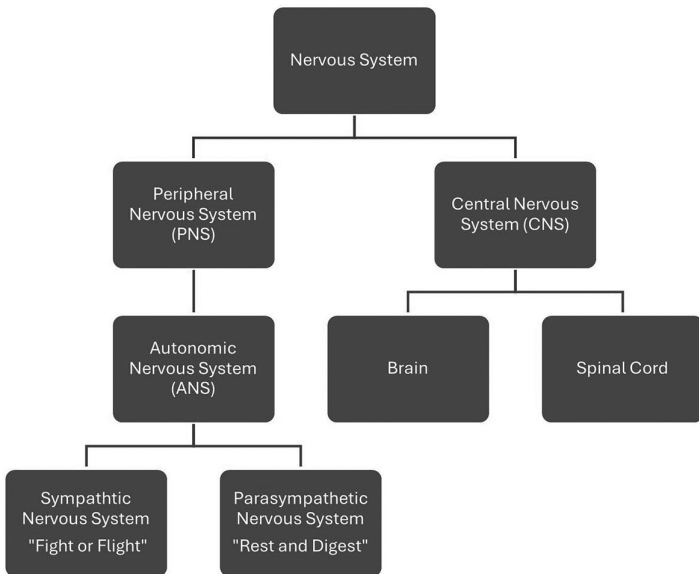


Figure 1.1 Divisions of the Nervous System within the Human Body.

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things we have no control over – like the release of hormones from our glands or the movement of our heart muscles.

The actions of our ANS are divided into two main evolutionarily advantageous divisions – the sympathetic and the parasympathetic. The sympathetic division gets you ready for action – this is the “fight or flight” system, whereas the parasympathetic division helps you restore your systems – this would be the “rest and digest” system. For this book, since we are speaking of Stephen King, master of horror, we will mostly find ourselves in the land of the sympathetic nervous system.

Now, let’s get back to CNS – specifically the brain. When first learning about the brain, it was very helpful for me to think about the “old” brain versus the “new” brain. The old brain includes the parts that are most like our animal counterparts, and these parts have been with us since the early days. It is responsible for all the things we need to survive – eating, sleeping, mating, fleeing, and fighting. This also includes basic emotions like fear, anger, and happiness. In essence, the old brain is simple but essential. Much of what is considered old brain is located in the lower parts of our brain – near the brain stem and underneath what you are probably picturing when you picture the human brain.

What most people imagine when they think of the human brain is the new brain – that is, the cerebral cortex (sometimes referred to as neocortex or new cortex). This is where the things that make us human are located – like complex problem solving, logical reasoning, and self-awareness. The cerebral cortex is divided into four main lobes – the frontal, parietal, temporal, and occipital (see Figure 1.2). The occipital is located at the back of the brain, and it mostly deals with visual processing. Parietal is concerned with touch and spatial processing, and the temporal is involved in auditory processing, language, and memory. The frontal lobe is of utmost importance when we talk about those things that make us human – what we call higher-level cognitive skills.

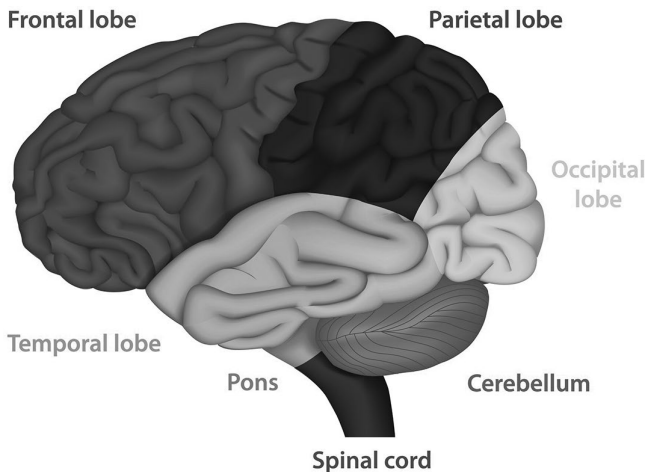


Figure 1.2 Main Lobes of the Human Brain.

But don't let this explanatory division fool you – these two “parts” of the brain have significant overlap and are in constant communication with each other and play key roles in what then gets sent to and received from the PNS and ANS. Throughout this book, you will get to know very specific parts of both the CNS and PNS, and we will begin now by using *The Shining* to demonstrate how some of it works.

Your Mouth Runs Dry

One biological mechanism that is intimately entwined with the health psychology concepts we will be talking about in this book is the hypothalamic-pituitary-adrenal (HPA) axis. It involves key brain structures of our CNS (hypothalamus, pituitary gland), and it then connects to the endocrine system via the ANS. This biological system is associated with our “fight or flight” reactions, and it was what *The Shining* was activating in my body while I read it in my Johnstown hotel room.

Figure 1.3 gives a good breakdown of what was happening while I was avoiding writing my dissertation by reading a book, including multiple “threats” hitting me at once. After some introspection, I think there were several psychological threats getting under my skin.

First, they don't let you stay in graduate school forever – you either leave with your PhD – your dissertation completed and defended – or you leave without it. I was very worried that my time was running out, and research has shown that impending deadlines are highly stressful and threatening (e.g., Sussman & Sekuler, 2022).

Second, I have always suffered from imposter syndrome – the feeling that you are not good enough for the current role you are pursuing. This constant self-doubt is extremely ego-threatening, and just like an impending deadline, it can be highly stressful and threatening (Chrousos et al., 2020).

Lastly, I think that Stephen King is just really good at creating a scene. And the scene he was creating in *The Shining* was so well-developed and illustrated, and so overlapping with my current situation, that my brain could not separate reality from fiction. I began to perceive threats where there were none. The fact that Jack Torrance is struggling to complete his play, as I was struggling to complete my dissertation, hit home. To finish it, he takes his family to a secluded hotel to diminish distractions, and yet is plagued with self-doubts, making the task much more difficult than he imagined. What was I thinking when I picked this book to read?

This created the perfect storm for my HPA axis to become activated. Reading the book, my brain was under siege. My hypothalamus interpreted several threats, and its solution was to get the body ready to fight or flee. A part of the hypothalamus known as the paraventricular nucleus then released corticotropin-releasing hormone (CRH), which traveled to the pituitary gland, which is located just underneath the hypothalamus. The CRH let the pituitary gland know something was up, and, in response, the pituitary released a hormone called adrenocorticotropic hormone (ACTH). The ACTH then traveled down through my blood to the top of my kidneys, where the adrenal cortex (the outer portion of the adrenal glands) is located. The adrenal cortex then produced cortisol (aka glucocorticoids), which is

HPA AXIS

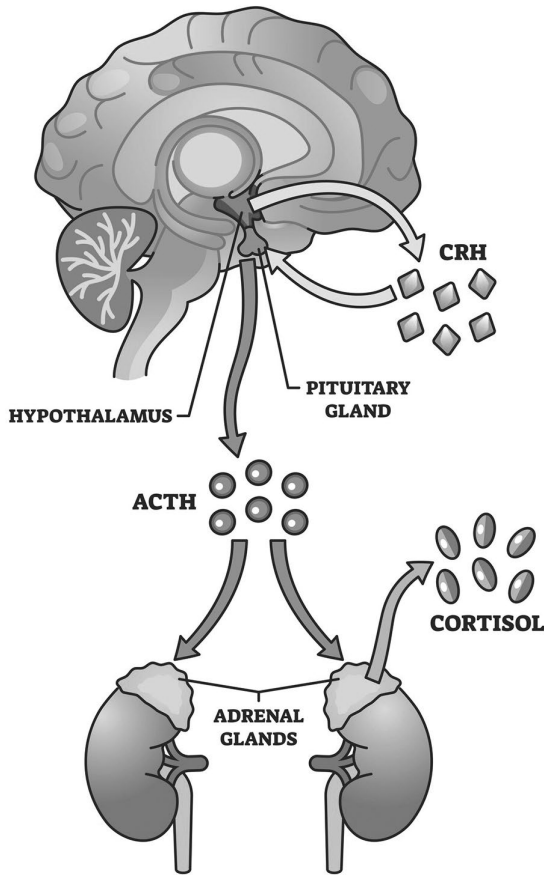


Figure 1.3 Hypothalamic-Pituitary-Adrenal (HPA) Axis Cascade.

known as the “stress hormone.” All of these hormones released during this cascade have downstream effects on both our sympathetic and parasympathetic nervous systems that help us survive when faced with a fight or flight-style threat. In summary, what our minds perceive as threats in the world around us (whether real or imagined) are translated from psychological or social phenomena to the biological phenomena through the HPA axis.

While my own experiences illustrate this key biopsychosocial phenomenon, it is also painstakingly described by King himself in some of Jack Torrance’s own experiences. In Chapter 23, “In the Playground,” Jack ventures out on one of the last good days of fall to trim and prepare The Overlook’s topiary animals for their long winter hibernation. It is here, while consciously understanding that the shrubbery

rabbits, dogs, buffaloes, and lions are not real animals, his hypothalamus does begin the fight or flight response, maybe due to Jack's unconscious understanding of the evil nature of the hotel:

Everything was just as it had been. So why had the flesh on his face and hands begun to creep, and why had the hair along the back of his neck begun to stand up, as if the flesh on his back had suddenly been tightened?

(King, 2012, p.304)

What Jack is experiencing are some key aspects of the biology of the fight or flight response. When the cascade described above is instigated, the brain and body are trying to maximize survival. A threat has occurred, and in our most recent past as evolutionary creatures, that usual was a physical threat. The body needs to actually do something physical in order to stay safe. To ward off this threat, blood needs to flow to key areas – such as your lungs and heart, so that it can then send oxygenated blood to large muscles needed for physical exertion, such as running. In order to do this efficiently, it will start to reduce blood flow to the “non-essential” areas of the body – such as extremities. At the moment of great threat, you do not need blood to be flowing to your face or hands – and in this case, it resulted in those parts of Jack feeling numb or “creeping.”

What is the deal with his hair standing up? This is probably also a result of sympathetic nervous system activation. What does your body do when you exert a lot of physical energy? You sweat to help keep your body from overheating. Part of this HPA axis cascade is activating your sweat glands in anticipation of the physical exertion of fighting or fleeing. When this happens, and the sweat starts, you basically become an electrical conduit (on a small scale!). The more stressed you are, the more your skin is able to conduct electricity, which leads to the possibility of the hair on your skin “standing up.”

In health psychology, we use this as a way to measure sympathetic nervous system arousal – it is called a skin conductance test or galvanic skin response test. Study participants have electrodes placed on their fingers or hands, and the researchers administer a small and harmless electrical signal. The idea is that the more your skin conducts the signal, the more you experience sympathetic nervous system arousal.

Okay, let's get back to *The Shining*. Keep in mind that nothing actually threatening occurred to Jack, yet his mind and his fear made connections to his body, resulting in physiological changes. Here's health psychology!² Jack experiences this again later in the book when he investigates the infamous Room 217, which has left Danny catatonic and the cook Dick Halloran swearing to never spend another season at The Overlook.

A chilled finger pressed gently against the base of his spine, cooling him off ten degrees. It was joined by others, and they suddenly rippled all the way up his back to his medulla oblongata, playing his spine like a jungle instrument.