

Review Article

Investigating Introversion and the Enjoyment of Solitary Environments

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Abstract: The word introversion originates from the Modern Latin *introvertere* combining *intro* (to the inside) and *vertere* (to turn). It was in use in the early 17th century regarding spiritual contemplation before being popularized by Carl Jung in the 1910s to describe focusing energy inward. Then solitude originates from the Latin word *solitudinem* meaning loneliness, solitariness rooted in *solus* meaning alone. Historically, it has transitioned from a religious practice of withdrawal to a, often, positive, modern, and voluntary state of being alone for self-reflection and personal growth. It is distinct from the often, painful, emotional experience of loneliness. Psychoanalytically, solitude is seen as a fundamental human experience that develops in early life. It is often described as a dualism or a “state of being with the self.” Somehow contrary to the traditional belief that introverts universally thrive in solitude, recent studies suggest a more complex relationship between personality and the enjoyment of alone time. This exposition investigates these nuances finding that while introversion is associated with higher frequency of being alone, it does not directly predict enjoyment of that solitude. Instead, the pleasure derived from solitary environments is more closely linked to a proactive “solitropic” motivation rather than simply a low desire for social interaction. Furthermore, research suggests that the benefits of solitude such as mental rejuvenation and reduced stress are experienced by various personality types when the choice to be alone is autonomous and volitional. It is suggested that “high functioning” introverts seek solitary environments for personal growth rather than escape. Introversion is often characterized by a preference for quieter environments and a need to manage social stimulation. The author explores the physiological underpinnings of the preference, examining how introverts utilize solitude for cognitive and emotional restoration. While social engagement is draining for introverts, solitary time provides a necessary “reset” driven by different neurochemical responses to low-arousal environment. Contrary to popular belief, introverts do not inherently enjoy all solitude, but rather, they benefit from “self-determined” time alone which reduces stress and increases autonomy satisfaction. As individuals, mostly young adolescents experience time being alone. The exposition examines the impact of introversion on the enjoyment of solitary periods. Looking at other data, it is found that while introversion generally correlates with a higher frequency of solitude, it does not inherently guarantee positive effects, as it is also linked to shyness and potential feelings of loneliness. There is possible indication that enjoyment of solitary environments during a period depends on whether the motivation for solitude is driven by an affinity for quiet pursuits or a fear of social situations. Although introversion is often linked with lower happiness, the ability to find enjoyment in solitary environments serves as a buffer against loneliness, highlighting that the quality not just the quantity of solitude defines its impact on well-being.

Keywords: Enjoyment, Environment, Introversion, Investigating, Solitude.

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INTRODUCTION

Based on research, introversion covers different themes such as mental well-being, workplace dynamics, social engagement, and academic performance. A study on introversion links it to lower mental well-being, suggesting that introverts may be more vulnerable to depression than extroverts due to lower self-esteem, reduced social support and pressure to conform to an “extroverted culture.” While it is generally believed that introverts have lower self-esteem, it is possible that those with high social engagement show higher self-worth suggesting the need for tailored support during group work. Introversion concerning workplace can analyze the understanding of this personality type that can improve productivity and inclusion benefiting both employers and employees. A study focusing on medical education can define introversion as a continuum and use a “goodness of fit” model to suggest that minor pedagogical adjustments can help educators to support both introverted and extroverted learning styles (Davidson *et al.*, 2015).

The extroversion-introversion trait refers to a dimension of personality that contrasts qualities such as sociability, assertiveness, and enthusiasm with qualities such as social reserve, quietness, and thoughtfulness. Its place as a central element of personality has been recognized since antiquity. Jung popularized the idea of extroverts and introverts as distinct types characterized by their tendencies to channel “psychic energy” outward and inward (Davidson *et al.*, 2015).

Hippocrates and Galen described a set of personality types that were based on the balance of four humors in the body and these categories resemble the opposing poles of the modern extroversion-introversion dimension. Wundt in the early twentieth century extended the ancient model suggesting that the personality types that Hippocrates and Galen identified are not discrete categories, but continuous dimensions (Eysenck, 1985). The personality dimension that is now thought of as extroversion-introversion was said to reflect a person’s propensity to have quickly emotions (extroversion) versus slowly changing or stable emotions (introversion). Thus, in Wundt’s formulation, when situations change, extroverts’ emotions change too, whereas introverts are left introspecting and reflecting (Lucas, & Diener, 2001).

The research highlights the need for educators in schools, for example, to support introverted learners by validating their unique, often quieter, methods of collaboration rather viewing them as lacking social skills. Learning through social interaction has been documented widely, however, how introverted individuals are socially engaged in learning is largely unknown. The study is to examine the interaction effect of introversion and social engagement on self-esteem, schoolwork engagement and school turnout.

The Myers-Briggs Type Indicator (MBTI) developed by Isabel Myers during World War II, assesses personality types based on the theories of psychologist Carl Jung. The MBTI was designed to facilitate and improve working relationships among healthcare professionals, particularly nurses. Myers designed this questionnaire based on Jung’s theory of “individual preferences,” which posits that the seemingly random variations in human behavior stem from fundamental differences in mental and emotional functioning. Myers described these variations as different ways individuals prefer to engage their minds (Myers, 2016).

Learning is a social process in which students gain knowledge. Through social interaction and exchanging ideas with their classmates (Vygotsky, 1978). Individuals differ in terms of their inclination to inner and outer world known as introversion and extroversion, and of the world population 30-75% are introverts (Laney, 2002, Cain, 2013). Introverts tend to have low- social desire and to withdraw from social activity, thus, it would be important to know, how introversion interact with social engagement in school. The understanding that introverts lack social skills are not true. Many introverts function well in social situations (Costa & McCrae, 2006). Although they might prefer to avoid them due to overwhelming feeling by too much social engagement (Helgoe, 2010). To say introverts can have good social skills but they may still withdraw from social activities due to their low social willingness. Do introverted individuals report low social engagement in their learning? Are they more prone to turn out in learning and do they have low academic well-being example, schoolwork engagement or general well-being that is, self-esteem? How does introversion interact with social engagement and affect well-being.

Introversion as a personality trait refers to the individual difference in their incarnation toward the inner and the outer world (Jung, 1921). Although no one is completely introverted or extroverted. Usually, introversion and extroversion are viewed as opposites, and introversion can also be defined as low extroversion. While extroverts like to socialize with other people, introverts are more comfortable with their inner world of thoughts and feelings (Helgoe, 2010) and prefer solitude (Burger, 1995). Like all people introverts need social respect. However, they are selective when building social contacts, and they require more time alone to balance out their energy after social situations because they can get overstimulated (Schmeck & Lockhart, 1983). Introverts tend to be sensitive, introspective and interested in the deeper feelings of encounters or transactions they are also empathetic, caring and have good listening skills, which may help them better to understand and help others (Cain, 2013).

Introverts are more likely to look to themselves first for causes of difficulties. They are more intra-

punitive than extra-punitive. The professional helper may need to focus their attention on the fact that some problems have their source in the environment. Introverts gain experience more easily after they have a conceptual framework. Therefore, introverts, benefits from comments that help them clarify the concepts behind their own behavior and that of others. Principles that explain why individuals behave in certain ways make the environment more understandable and therefore safer, so that action can be attempted (Isabel & McCaulley, 1985).

Sessions with introverted individuals often have long pauses while the introvert clarifies what has been said internally, or gains the courage to test another idea on the professional helper. A helper can discuss how the introvert can attempt more extroverted activities, and the helper can prepare introvert for experimenting with extraversion between counseling sessions. We understand introversion in type theory as a neutral term referring to an inward-turning attitude, more concerned with inner than outer realities. In personality measure, the introverted attitude is often associated with scale names that have a negative connotation. To some extent introverts can be expected to report some anxiety or shyness. In theory introverts should be less at home in the environment than extroverts. In addition, since the majority culture is extroverted, the normal characteristics of introverts would be less typical and therefore not as well understood or appreciated. Some few measures, however, will express the positive qualities of introverts such as self-sufficiency (Isabel & McCaulley, 1985).

The Common Conception

The common conception of introversion is that it is a personality trait characterized by a preference for solitude, quiet environments, and inward reflection over social stimulation. While often stereotyped as merely being shy, antisocial, or “shy and reticent,” true introversion is more accurately understood as a difference in how an individual manages energy and processes stimulation. It is viewed that introverts draw energy from within, needing alone time to recharge especially after prolonged social interaction. They are typically seen as reserved, quiet, and deliberate in their speech. Introverts often prefer deep one-on-one connections over large social gatherings or networking events. They are considered to be “word economists,” focusing on thinking before they speak and processing information deeply. They often gravitate toward hobbies that allow for introspection, such as reading, writing or contemplation.

The public consciousness often misinterprets introversion, causing it to be inaccurately linked with negative traits. There are many popular misconceptions about introversion and past studies have overlooked certain aspects of introverted experiences. Much has been researched into extroversion, the author argues but not very much has been highly conducted on introversion, for example, specific impacts on mental

health or unique needs in certain environments. Shyness is a fear of social judgment or anxiety while introversion is a preference for low stimulation environments. A person can be a shy introvert or a very confident, socially-adept introvert who simply finds crowds draining. The author’s interest is to improve understanding of introverts in education, increase workplace satisfaction, and provide tailored self-care strategies.

Introverts often enjoy socializing but they are more selective, favoring quality over quantity in friendships.

It must not be believed that introverts cannot be leaders. Many introverts make effective leaders by being good listeners and taking a thoughtful deliberate approach to decision-making. Introversion is not a flaw or pathology but a natural, normal variation in personality. Researchers generally believe introversion has a biological basis relating to higher levels of cortical activation at rest which causes introverts to reach overstimulation faster than extroverts. Modern psychology views introversion and extroversion as a continuum not a binary choice. Most people fall somewhere in the middle with many identifying as “ambiverts.” Research has identified four types of introverts: social, thinking, anxious and restrained. In many cultures extroversion is often considered the ideal, leading to a “bias” where quiet introspective behavior is overlooked or undervalued.

Introversion is commonly misunderstood and often seen as a negative quality, but it is important to define it accurately and dispel any misconceptions. Understanding the nature of introversion is crucial for appreciating the experiences and perspectives of introverted individuals. Defining introversion is a complex task that requires a nuanced understanding of human behavior and psychology. It involves exploring the ways in which introverts process information, interact with the environment, and recharge their energy. By understanding clearly the features of introversion, we can gain a deeper understanding of its impact on individuals and society as a whole (Brodowicz, 2024).

Introversion is a nuanced personality temperament centered on energy management, where individuals replenish by spending time alone rather than through social interaction. It is not synonymous with shyness or social anxiety but rather a preference for lower stimulation environments and a tendency to process information internally before expressing it. Social introverts prefer small group or solitude over large crowds but not necessarily shyness. Thinking introverts are dreamers who spend significant time in their inner, creative, and imaginative thoughts. Anxious introverts seek solitude due to feelings of shyness or awkwardness in social settings. Restrained introverts are thinkers who

take time to act and make decisions operating with deliberation.

Introverts can possess strong presence acting as intentional, thoughtful listeners. They are often use longer neural pathways to process information, resulting in thoughtfulness, high-impact contributions. Introverts often enjoy people but prefer intimate settings over boisterous gatherings. Understanding these nuances helps introverts embrace their need for solitude as a way to recharge rather than a defect (Bindra, 2018).

Examining the impacts of introversion on personal relationships reveals a complex interplay of strengths and challenges. Introverts often value deep connections and meaningful conversation, which can foster a strong sense of intimacy in their relationships. However, their preference for solitude and quiet contemplation may sometimes be misinterpreted as disinterested or aloofness by more extroverted friends. This can lead to misunderstandings and feelings of isolation for both parties if not managed effectively. The impact of introversion on personal relationships extends to social dynamics and communication styles. Introverts may feel overwhelmed or drained by large social gatherings, leading them to seek out smaller, more meaningful interactions (Brodowicz, 2024).

The Mechanic of Seeking Solitude

Introverts are highly sensitive to dopamine the neurotransmitter linked to reward and stimulation. While extroverts need high dopamine levels to feel energized, they reach a state of overstimulation faster, leading to anxiety or fatigue in high-energy setting. They also rely more on acetylcholine, a brain chemical associated with calm focus, deep concentration and long-term memory. Solitude such as reading and reflecting, activates this chemical, providing a feeling of energy and satisfaction. Research suggests that introverts have a more active cerebral cortex and process information more deeply resulting in a higher “energy cost” for social interaction.

Introverts have a limited “social battery” that drains during interactions even enjoyable ones. Solitude is the process of plugging in to recharge their batteries, preventing an “introvert hangover”, a state of exhaustion, irritability or illness. Solitude offers a space for introspection, allowing introverts to sort out thoughts, emotions, and experiences without external distraction. Being alone allows introverts to control their environment completely choosing when to talk, move, or rest removing the pressure to adapt to others’ needs (Gerth, 2026).

Introverts excel at intense, focused, and long-term tasks. Solitude creates a “default mode network” state where the brain makes connections, leading to breakthroughs and innovation. Solitude removes the overwhelming sensory input of crowds, noise, and constant interaction allowing for enhanced mental

clarity. Without the pressure to “be on” for social situations, introverts can be authentically themselves, fostering self-awareness, confidence, and internal joy.

One would say the mechanics of introversion involve a preference for internal stimulation which includes thoughts, ideas, internal sensation over external stimulation. Solitude serves to restore their nervous system balance which is vital for their mental health (Granneman, 2025).

Introversion is deeply linked to the cognitive style of processing information characterized by a preference for analysis, reflection and depth over breadth. Scientific research suggests that it is not just a personality trait but a neurological reality where introverts utilize longer, more complex neural pathways to process information.

Introverts tend to have higher resting brain activity and increased blood flow in the frontal lobes which are associated with internal processing, planning, and problem-solving. Information in an introverted brain takes a longer, more circuitous route, passing through more areas linked to memory and planning, resulting in slower but deeper processing. While extroverts often process information faster and in real-time, introverts take longer to process allowing them to integrate, analyze, and connect information on a deeper level. This means they often “think in layers” evaluating multiple angles and extracting deeper meaning before formulating a complete thought (Reiner, 2025).

Because introverts prefer observation over dominating conversations, they are more attuned to subtle environmental and emotional cues, such as shifts in behavior, body language or subtext. Introverts rely more on the neurotransmitter acetylcholine which rewards inward reflection, thinking deeply and focusing on one thing for a long time. This contrasts with the dopamine driven stimulation-seeking nature of extroverted brain. Because introverts take in more data and process it at deeper level, they can reach information capacity faster leading to a need for quiet downtime to recharge. The deep layered processing can make it challenging to retrieve words or articulate thoughts quickly in fast-paced scenarios (Reiner, 2025).

One of the major differences between introversion and extroversion is in how the brain responds to stimuli. Research has shown that introverts have a more active cerebral cortex, the part of the brain responsible for thinking, decision-making, and processing sensory information. This heightened activity means that we process information deeply, making us more reflective but also more easily overstimulated (Reiner, 2025).

The tendency to absorb and analyze information at a deeper level influences their learning preferences.

Many of us thrive in structured educational environments that allow for independent study and introspection. Programs that focus on behavioral sciences provide an ideal setting for those of us who excel in meticulous observation, critical thinking and problem-solving. These programs emphasize analytical skills and structured learning, catering to the natural strengths of introverts. Since we often prefer learning through reading, observation, and one-on-one discussions rather than large interactive group settings, such structured approaches align well with our cognitive tendencies (Reiner, 2025).

Some Strengths of Introversion

Introverts process information more thoroughly leading to well-thought-out ideas and solutions. Because they prefer to listen rather than dominate conversations, they are often great at understanding others. Many of them excel in creative fields due to our ability to think outside the box and explore new perspectives. They are comfortable being alone and can find fulfillment in solitary activities without relying on external validation. While they may not have a large social circle, the relationships they form tend to be deep and lasting. Recognizing these strengths helps them to embrace who they are rather than feeling pressured to conform to extroverted norms.

While they may thrive in solitude, they live in a world that often values extroverted qualities. This creates challenges in social settings, workplaces, and even within their personal lives. Finding a balance between their need for quiet and the demands of the external world is essential. Understanding how much socializing they can handle before feeling drained allows them to plan accordingly. It is also helpful to find environments that support their natural tendencies such as workplaces that offer remote work options or independent tasks. In addition, introverts can learn to communicate their needs to others. Many extroverts do not realize that introverts' need for solitude is not a rejection of them, but rather a way to recharge. By explaining this they are able to foster understanding and maintain healthy relationships (Reiner, 2025).

People are to remember that introversion is more than just a personality trait, it is a fundamental aspect of how their brains function. From sensitivity to dopamine to their preference for deep thinking, the science behind introversion explains why they prefer solitude and why social interactions can be draining. By understanding their unique strengths, they can embrace their nature than feel pressured to change. While society may favor extroverted qualities, introversion has its own set of valuable skills including deep thinking, creativity, and meaning connections (Reiner, 2025).

While solitary time can foster creativity and emotional regulation when it is chosen (Hammit, 1982), excessive solitary time poses significant risks to physical

and mental health. When time alone becomes involuntary or chronic, it often transitions into harmful isolation which is associated with about 29% to 32% increased risk of premature death, heart disease and stroke.

Excessive solitude is strongly linked to higher rates of anxiety, chronic depression, and suicide ideation. Loneliness can accelerate cognitive decline and increase the risk of Alzheimer's disease and other forms of dementia. Without external social stimulation to gauge reality, individuals may experience increased paranoia, anxiety, or delusions. Overthinking and prolonged isolation can lead to a state of mental restlessness, reduced focus, and impaired decision-making.

Chronic isolation triggers "fight-or-flight" stress signals that suppress the immune system and increase inflammation, making the body more vulnerable to viruses and chronic diseases. Loneliness raises stress hormones and blood pressure, causing the heart muscle to work harder and increasing the risk of damaged to blood vessels. Individuals who are excessively alone often experience poor sleep quality, resulting in less restorative rest and higher rates of daytime fatigue. Isolation can lead to a decline in physical activity, contributing to weight gain and poor physical health (Reiner, 2025).

A lack of interaction can cause social skills to atrophy, making social interaction awkward and exhausting which creates a cycle that leads to further isolation. Overdoing solitude can lead to hyper-fixation on one's own thoughts and reduced consideration for others. Excessive alone time is linked to higher incidence of alcoholism, substance abuse, and dangerous self-destructive habits.

However, solitude that is chosen is generally not harmful. Conversely, involuntary isolation is highly detrimental. Solitary time is more beneficial when used for creative or productive activities rather than passive media consumption or ruminating. Adolescents are particularly susceptible to the negative effects of social isolation while older adults may be more resilient unless facing chronic physical illness.

CONCLUSION

The conclusion on introversion and the enjoyment of a solitary environment synthesizes the idea that solitude is not a deficit, but a necessary constructive tool for self-care, creativity, and energy regulation. It moves beyond the stereotype of "shy" introvert to emphasize that intentional, quiet environments are a source of profound joy and fulfillment.

The introvert's preference for solitary environments is far more than a simple aversion to socializing. It is a vital self-sustaining practice that fuels well-being and re-energizes the mind. By embracing

quiet moments, introverts are able to process emotions, enhance creativity, and lower stress levels. Ultimately, solitude is not a state of lonely deprivation, but a necessary sanctuary that allows for authentic personal growth and long-term peace.

Ultimately, being an introvert in a crowded world is a journey of self-acceptance, often requiring the dismantling of misconceptions that view solitude as negative. Introverts do not just need to be alone to manage energy, they often find their highest state of joy and productivity within these quiet spaces. Recognizing this, society must shift its perspective to celebrate rather than stigmatize the quiet, thoughtful, and profound contributions that stem from an introvert's need for solitary reflection.

Introversion is a personality type that thrives on depth rather than breadth, making solitude a primary avenue for re-engagement with the world. Solitude acts as an essential "charger" for the social battery turning the "introvert hangover" into an opportunity for restorative, creative pursuits. By honoring their need for calm, introverts not only achieve a better understanding of themselves but also manage authentically with others when they so choose (Sabatin, 2020).

The key themes include: 1) Recharging (solitude is active, not passive, restoration). 2) Intentionality (it is about choosing to be alone to create or think, not loneliness). 3) Energy regulation (introverts manage their social battery to prevent burnout). 4) Creativity and depth (quiet environments allow for deep thinking and creative focus). 5) Empowerment (embracing solitary time increases self-confidence and self-worth).

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