

THE PHYSIOLOGY OF TYPE: INTROVERSION AND EXTRAVERSION

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Introduction

This is an essay on the physiology of Type. For Jung, the word Type was 1 convenient short hand which allowed him to identify with one label, both a person's preference for either Introversion or Extraversion, and as well their Natural Lead Function: Thinking, Sensing, Feeling, Intuition. He might, for example, have referred to one person as "An Introverted Feeler" and another as "An Extraverted Sensor." As it happens, today the physiological foundations for both elements of Jung's model are known. This is particularly exciting as it not only confirms Jung's observations as science, but as well provides exciting new insights.

The Physiology of Jung's Extraversion Introversion

So much has been discovered in the past ten years that it is now possible to be relatively certain about the physiological bases for the personality characteristics Dr. Jung identified as Introversion and Extraversion. What's more, it is now possible to provide scientific support for Jung's position that Extraversion and Introversion are in some way it is more important for us as individuals to satisfy our introverted / extraverted needs than it is for us to honor and use our natural lead function.

To begin to understand these elements of Jung's model better, it is important to develop a working familiarity with the following **physiological terms:**

R.A.S. – Reticular Activating System

The Reticular Activating System, located in the core of the brain stem and linked directly to the Frontal Lobes by a substantial conduit of neurons, functions to regulate our arousal — that is, the degree and quality of our sleep, REM, or wakefulness.

Understanding the role of the reticular activating system in human "thinking" is important to fully appreciating Dr. Jung's and Dr. Benziger's work. There are three distinct ways in which understanding the functioning of our R.A.S. promotes a deeper appreciation of Jung's model.

First, as the regulator of our stable level of wakefulness, it sets and maintains how much information or stimulation we take in, second per second, while we are awake.

Secondly, our R.A.S. when affected by anxiety or our fight-or-flight response rapidly and temporarily increases our arousal level. This enables us to be suddenly and fully alert, seeing much more than we normally see, noticing much more than we normally notice, when we are in danger. It prepares us to successfully respond to danger.

Finally, as a major communication link between our Frontal Lobes and our energy reserves in the brain stem, our R.A.S. makes it possible for us to obtain additional energy to focus our attention when directed to do so by our Frontal Lobes. This direct provision of additional energy to focus on a problem, experienced most powerfully by people with a natural preference in one of the Frontal Lobes – in either Thinking or Intuition – explains how and why Frontal thinkers – with a lead in Thinking or Intuition – tend to be more energetic than Basal thinkers, whose natural lead function is Sensation or Feeling. Frontals are often seen as: fast moving, fast talking, and intense or driven, Type A's – workaholics. Understanding this internal functioning explains why many Frontals are in a real sense addicted to problem solving. What's more, Frontals actively choose to do problem solving because of this energy high.

Set Point

The Set Point is the typical, stable level at which a given human system operates. We all have many set points. We have: our normal, typical weight; our normal heart rate; our normal breathing rate; and, as well, our normal waking arousal level. In all cases, a change in our environment or activity level may cause a temporary alteration in the affected system. If we over eat for several days, we put on weight. If we run, our heart beats faster. If we become worried, our arousal level will go up. However, for a healthy person such increases are temporary. When the increased activity or environmental stimulus diminishes, our system re-balances quite naturally to its set point.

Arousal Level

Our arousal level identifies the amount and speed of our brain's activity. Of necessity, our arousal level varies from waking to dreaming to sleeping. Moreover, when we shift from sleeping to waking we always "wake up" at the same level of arousal. In other words, we each have a stable level of arousal in the waking state, which may be seen as the set point for our waking arousal — that is how alert we are when we are simply sitting, fully awake, but not actively stimulated to "thinking" in a focused way about a problem.

Concerning arousal, Hans Eysenck's research suggests that humans are distributed along a continuum according to a normal bell curve. That is, fifteen percent (15%) are very aroused, fifteen percent (15%) are only minimally aroused, and seventy percent (70%) are in the middle.

Importantly, those of us who are highly aroused take in much more information second per second than the average person and may subsequently need to diminish or limit the "volume" of the stimulation around us. This leads others to see us as introverted. This is because, being so highly aroused, introverts tend to "overload" more readily, especially in highly stimulating (noisy, varied, colorful, eventful) environments. When this happens, introverts tend to close down in order to control or to limit the level of incoming stimulation and to make sense of everything they have already taken in.

By contrast, those of us who are only minimally aroused take in much less information second per second than the average person and may subsequently need to augment or increase the "volume" of the stimulation around us. This leads others to see us as extraverted. This is because, being only minimally aroused, extraverts tend to not think clearly or even fall asleep if they do not receive more stimulation from the outside environment. For this reason, extraverts are commonly found increasing the volume of stimulation in their environment. They turn on the TV and radio. They open the door and invite the dogs and or children to come in. They turn on the radio while reading, or move to a noisy place to read.

Finally, it seems, many people, about 70% of the population wake up at just the right level of arousal, to be alert and able to think clearly, but not so alert so as to be vulnerable to being overwhelmed by intense stimulation. Given their balanced arousal level, these people are able to manage well in a wide range of jobs and environments, by scheduling an oppositely inclined activity immediately following any activity which is either highly extraverted or introverted.

Given the above, it is possible to understand the following definitions for Extraversion and Introversion as well as to understand their implications for an individual.

Extraversion

Having a naturally low level of arousal which causes the individual to seek higher than normal levels of stimulation in order to “feel alive.”

Typical ways in which the extravert seeks stimulation include: trying to influence or control his or her environment; confronting others; engaging in competition; attending crowded parties or events “where the action is.”

Introversion

Having a naturally high level of arousal which causes the individual to seek lower than normal levels of stimulation in order to not feel overwhelmed.

Over a period of years, this need to not be overwhelmed by external stimulation develops into an internally focused thinking style which may seem withdrawn, meditative, quiet, or even reclusive to more extraverted person. Typical ways in which the introvert seeks to control the level of stimulation include: spending time reading, reflecting, or otherwise alone; avoiding or being accommodating to others; competing mostly with oneself or self image; going to small parties or out of the way places.

Additionally, it is important and helpful to understand the:

Physiology of Chronic Anxiety

When we are subjected to some type of chronic anxiety for months or years, it is our R.A.S. which shifts its set point so that we are continually more alert in our general waking state. Subsequently, we naturally become more introverted until we address the source of our chronic anxiety. Although somewhat disorienting, this shift is fully reasonable as it causes us to be more introspective, thereby increasing the chances that we will notice that we are living under some types of chronic anxiety which is “frightening” us and causing us to live on edge, always a bit in fear. As such anxiety is usually the result of some life choice we have made or some way we are

living our lives, the increased level of introspection increases the probability that we will see the problem at the level of the problem and solve it. When this is done and the source of our anxiety is resolved, we can quite naturally return to our normal level of wakefulness.

Subsequently, by juxtaposing what we have learned physiologically with Jung's own observations on extraversion and introversion, we have a clearer appreciation for Jung and as well as tools such as the MBTI and BTSA, others are using to help people apply Jung's model to empower and guide themselves. Here for example are five questions, which have left many people confused about Jung, Type or the MBTI for several years. In the light of the new information science provides, the confusion surrounding each question dissolves.

Jung saw Introversion as "saying no to life" and at the same time, a natural, normal way of being?

According to Dr. Hans Eysenck, Jung was 100% correct when he said that Introversion is a normal and healthy way in which many people live life, based on their physiology. At the same time, Jung was also 100% correct when he noticed that at least some Introverts seem to be saying no to life.

In point of fact, Introverts actually take in so much information second per second that they might be said to be "gulping in information" – a definite yes to life. Yet, the fact that overly loud environments in which a lot is happening can cause them to be "overwhelmed" can cause them to appear to be saying – in that highly stimulating context – no to life, when in fact what they are saying no to is simply the experience of being overwhelmed.

As well, some Introverts develop a negative attitude towards life as a result of being continually shamed or devalued when they live in a culture which seems to value and reward Extraversion more than Introversion. This is certainly the finding of Elaine Aron in *The Highly Sensitive Person: How to Thrive When the World Overwhelms You*.

Yet another factor which "gives Introverts a bad name" is this one. Many people, under chronic anxiety – brought about by many consecutive years of high stress – develop a negative attitude because of the stress they have had to face. At the same time, these people experience a shift as a result of the chronic anxiety, in their arousal system. They become more Introverted. Indeed some

natural Extraverts become so “stressed out” their arousal shifts so much they actually appear to be Introverts. All these people – who are experiencing a higher level of Introversion as a result of chronic anxiety – reinforce the older belief that “Introverts say no to life.”

Bibliography on Extraversion / Introversion

For those wishing to read more in-depth and technical sources, the following bibliography is recommended.

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For the course “The Physiological Bases of Type and Extraversion / Introversion”

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