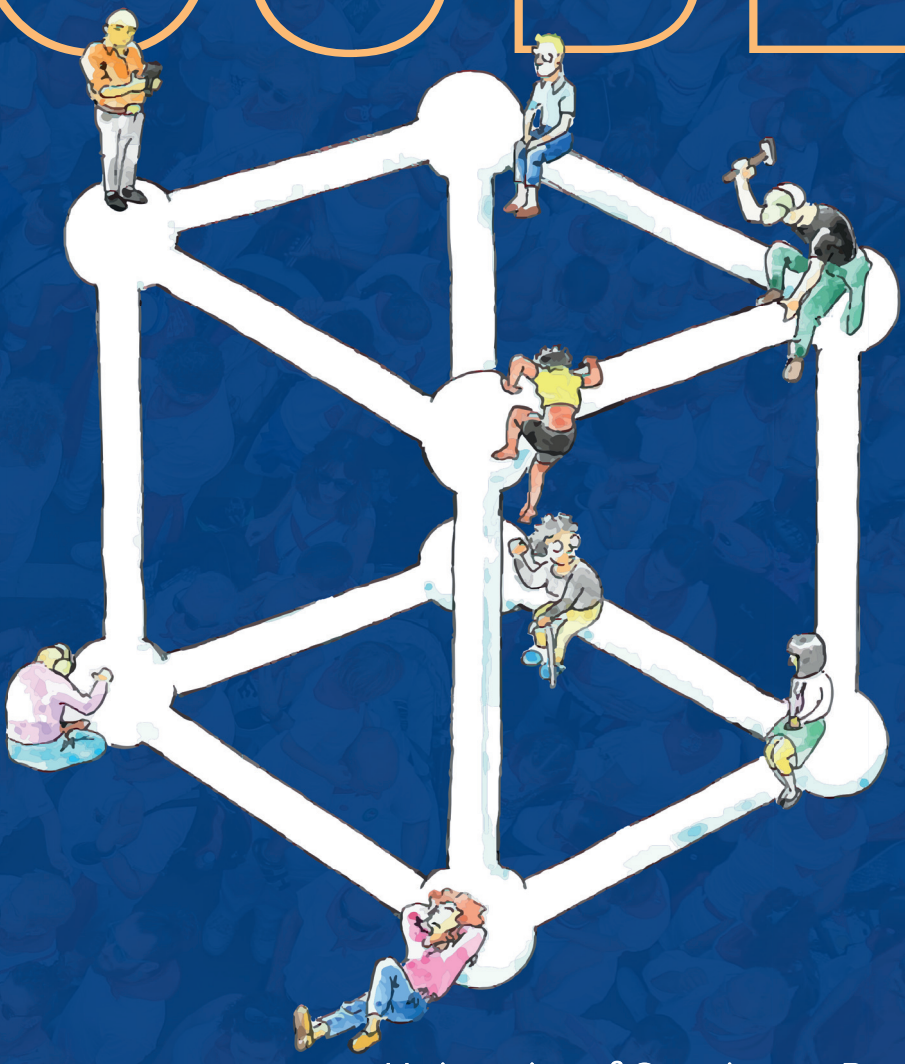
Rinske R. Vermeij & Corné H.F.L. Vroomen

# HEYMANS' CUBE



University of Groningen Press

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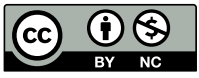


# Contents

# Prologue

On 12 May 1930, the *Leeuwarder Courant* reported on a multiple homicide.[1] In the article, the suspect was described as follows:

**Het beeld van verdachte.**

Verdachte behoort tot het type dér nerveuzen, die volgens prof. Heymans, eerder in moeilijkheden geraken dan andere meer bevoorrechten. Zijn activiteit en secundaire functies waren gering. Hij leed aan een lichte neurose, die hem echter niet in den weg stond. Hij heeft zijn daad niet gepleegd als dwanghandeling, doch meer als een impulsieve handeling.

The suspect belongs to the nervous type, which according to prof. Heymans is more likely to get into trouble than others more privileged. His activity and secondary functions were minimal. He suffered from a mild neurosis, which, however, did not impede him. He committed the act not out of compulsion, but rather as an impulsive act.

This way of describing a murder suspect would look strange in a newspaper today. It is difficult to imagine a reputable news outlet reporting on such a serious case and including the suspect's results from a personality profiler such as the Myers-Briggs Type Indicator or the Big Five. Yet, in the Netherlands of the 1930s, it was not uncommon to find descriptions like this. The

1 For this excerpt, see https://www.dekrantvantoen.nl/vw/article.do?code=LC&date=19300512&v2=true&id=LC-19300512-3027.

cube was used to explain people's behaviours in the context of broader social debates over accountability, voting rights, and other societally relevant issues. For a time, these types took on an important role in such public debates, as well as in how people navigated their personal lives.

The typology developed by Gerard Heymans (1857–1930), also known as 'Heymans' Cube', had a considerable impact on how citizens understood themselves, others, and the world around them. Although the theory is now over a century old, later personality researchers have characterized it as far ahead of its time. Even today, it can still provide a valuable framework for understanding the psychology of individual differences. Therefore, this book offers a new interpretation of this old theory Heymans presented in his *Inleiding tot de speciale psychologie*, and reintroduces it to a modern audience.

As you read through the three chapters in this book, the terms and descriptions used in the newspaper clipping will become clearer and more understandable. Chapter One presents an overview of Heymans' psychological theory, in which certain fundamental mechanisms of thinking and acting are explored and dissected. For example, you will learn the difference between compulsive and impulsive acts according to Heymans. Chapter Two explains how the individual differences described in Chapter One come together to express patterns of traits. There, it will become clear how the 'nervous type' tends to act, and why their temperamental constitution might be considered less privileged than some of the other types, such as the choleric or phlegmatic. Chapter Three discusses the origins, methods, and impact of the typology, in order to place it properly in its historical context. Finally, the epilogue touches on the authors' motivation to produce this book, as well as some decisions that were made in that process.

The contents of this book can be understood both as a practically valuable tool or as a curiosity from a different time. Regardless, it should be an intriguing read for anyone curious enough to pick it up.

# CHAPTER ONE: Theory

Why do people act the way they act? The average person might ponder this question on a daily basis, and psychologists have conducted a great deal of research to find reliable answers to it.

Perhaps the most significant hindrance to this research is the simple fact that everyone is unique. Each individual's biology is partly determined by their genetic makeup, on top of which they are shaped by their own distinctive experiences in their course of their lives. It is impossible for a science such as psychology to provide specific, complete answers to why I, she, he, or they came to be the way they are. However, it is possible to look for patterns in the differences that can be observed. Gerard Heymans spent a good part of his career investigating *differential psychology* — the psychology of individual differences. His research resulted in the Heymans Cube, a typology that organizes all variations in temperament along three axes, resulting in eight types. Before the ultimate *types* can be explored in Chapter Two, this chapter will introduce the theory behind it, including the three *dimensions*.

We begin by considering how the mind works in general. From that foundation, we can map where individual differences can occur. To explain Heymans' theory, we follow his lead and distinguish between five psychological functions: consciousness, perception, intellect, emotions, and finally acting and volition.

## 1.1 Consciousness

We all have at least some idea of what it means to be conscious. After all, everyone has experiences, and knows what it is like to 'have something on their mind'. Our consciousness contains the things we are currently perceiving, experiencing, or contemplating. In most cases it is possible to examine the contents of our thoughts and describe what is occupying our attention. However, there is a limit to what we can be consciously thinking about at any given moment. At some point our attention will shift from one thing to the next.

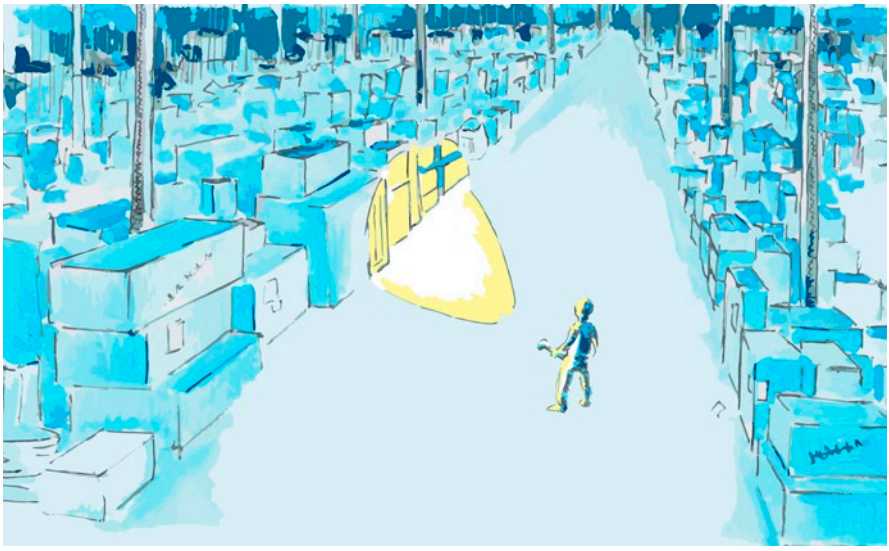
As one thought is followed by another, what happens to it? The first thought does not disappear entirely, because it is often possible to recall it. That means that it is stored somewhere. We may conclude that our consciousness is not isolated, but part of a much larger mental complex. This complex is made up of everything we 'know' or 'have in our memory' without currently 'thinking about it'. It may contain a memory of some concept, theory, or foreign word, or facts learned in school, or events experienced in the more or less distant past. It could include holding on to feelings, like guilt towards a particular friend; a resolution to act, such as buying that friend a gift; or practical knowledge on how to prepare a meal, deliver a speech, drive a car, or create an artwork. Together, these diverse examples can be summarized with the term *mental contents* (*bewustzijnsinhouden*).

As we go through life, we are constantly drawing on this accumulation of knowledge and experience. In some cases this involves the active recollection of previous situations, while in others it occurs more passively or automatically, through ingrained habit or custom. Further, these mental contents are continually changing: new facts and memories are added, older information is updated, and knowledge may also be lost and forgotten over time.

## Two types of consciousness

It is possible to make a distinction between what we experience in the moment and what happens with that information later. Then, we are differentiating between the *central consciousness* and the *peripheral consciousness*. The central consciousness contains only those mental contents that we are directly perceiving or thinking about. This is the smaller, in-the-moment type of consciousness. Peripheral consciousness refers to everything that was once in the central consciousness but is no longer actively 'on our mind'. However, it could be made fully conscious again, or in more subtle ways exert an influence on the central consciousness. In contrast to its limited counterpart, the peripheral consciousness is broader, potentially even limitless.

To envision this, picture an immensely large storage room. The interior is pitch black, and there is no way of telling how far the room actually stretches. The aisles of stored mental contents go on and on. Only a single source of light appears in this dark space. A person with a flashlight is walking around, at times pausing to inspect the contents of a cabinet or drawer.



In this metaphor, the only difference between the central and peripheral consciousness is where the light is shining at a given moment. The contents that are illuminated by the flashlight share all of the same qualities as those that remain in darkness. Some might be hidden away in difficult places, obscured by dust or other objects, yet anything is potentially accessible under the right conditions. That means that these contents can be brought to consciousness at any moment, either incidentally or at will. For example, we can revisit a situation we experienced in the past and examine it to find lessons for the future.

The ease with which mental contents can be brought to consciousness depends on how easily they can be accessed. If a thought is related to the contents that are currently on a person's mind, then it is more likely to come to mind as well, through association. We can also notice how sometimes contents gradually gain more clarity as they become conscious, for example in the tip-of-the-tongue effect: the feeling that a word or name is on the verge of emerging into consciousness, but remains just out of reach. In this case, a thought in the central consciousness elicits additional information from the peripheral consciousness in a purposeful effort to recall this previously stored piece of knowledge or experience.

In addition to active recollection, information contained in the peripheral consciousness continues to affect our thinking in more subtle ways. In fact,

our actions are always informed by previous experiences without needing to actively recall those experiences. There are many names for this kind of phenomenon, such as common sense, intuition, or socialization, but the common thread is that we have a vast collection of tacit knowledge that we constantly draw on without really thinking about it. In the shorter term, the peripheral contents may exert their influence through a person's mood. Being cut off in traffic may ruin someone's day, even once the incident has left their mind; but luckily, they may equally be bolstered by encouraging words after they were spoken. Whether positive or negative, experiences can have an effect long after they have left the central consciousness.

## Size of the central consciousness

We have already come across two key elements in understanding this larger complex of consciousness, time and size, which directly impact and limit the central consciousness. As mentioned above, there is a limit to how much we can think about at a given moment, which can be referred to as the *narrowness of consciousness*. This 'narrowness' means we cannot think of infinitely many things at once. It also has the consequence that when new impressions come to our attention, they supplant or weaken the impressions that were previously present.

This limitation affects the central consciousness to varying degrees at different times, fluctuating between being narrower or somewhat wider, between containing less or more contents — up to a certain limit. In the course of a day, there may be times when it is easy to distribute attention across several tasks, while at other moments even the smallest task may seem demanding. Thus, for example, some people prefer to work in the morning, whereas others are at their best in the evening or night. In the longer term, everyone has periods when they are doing well and seem to have greater mental capacity, after which a stressful event can suddenly make life more difficult to manage.

In general, this limitation to the central consciousness is beneficial, as more energy can be dedicated to a smaller number of thoughts. The central consciousness becomes less accessible to contents that are not associated with the present situation, offering protection against distractions and irrelevant information. When someone is fully absorbed in an activity, such as watching a movie, they can become oblivious to the world outside. This is helpful because it is difficult to pick up on important details on the screen while simultane-

ously following a conversation or thinking about what's for dinner. The narrowing of the central consciousness permits its current contents to present themselves more clearly and in greater detail.

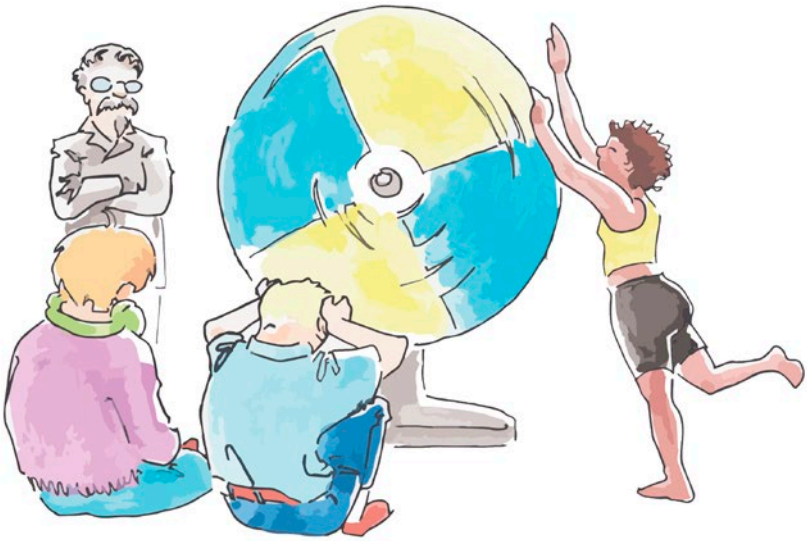
Once the credits start rolling, the spectator suddenly returns to fully experiencing the world. The concentration broadens to allow unrelated contents to enter the consciousness. They look outside the window for a moment, and take in their immediate surroundings once again. All of a sudden, they might remember an earlier conversation, or an errand they forgot to run. When this broadening happens, a larger number of contents are able to occupy the mind at once. In other words, there is an inverse relation between the *number* and *intensity* of mental contents in the central consciousness.

### The secondary function dimension

With a basic understanding of how the consciousness functions and how its limits fluctuate, we realize that mental contents leaving the central consciousness need to be stored in the peripheral consciousness. This is where the first dimension of Heymans' cube comes in. Briefly put, just as we have distinguished between central consciousness and peripheral consciousness, we may distinguish between the primary and secondary functions. The primary function refers to the strength — of emotions, recollections, or other types of thought — that contents exert while in the central consciousness. The secondary function then refers to the effects they continue to exert after disappearing from the central consciousness. Here we may think of the subtle effects of the peripheral consciousness discussed earlier, such as intuition, the tip-of-the-tongue sensation, or the lingering impact on mood.

These occurrences have been described with the term *aftereffect* (*nawerking*). The idea is that each piece of mental content has an aftereffect because it takes a certain amount of time to process an impression. The aftereffect of a visual impression is the easiest to observe, and Heymans experimented on it in the following way: Imagine a disc with two areas of different colours. If the disc spins slowly, it is still easy to distinguish the two colours. But as the spinning increases in speed, the colours start to blur together. The speed at which this blurring effect occurs varies from person to person. The same concept can be applied more generally: everyone has a different speed at which

mental contents are processed and 'cleaned up' from their central consciousness in order to make room for newer contents.



This processing speed determines whether someone can be considered dominantly primary or secondary functioning. Specifically, primary-functioning types process information much faster than secondary-functioning types. As Heymans explains:

> We all know, on the one hand, 'people of the moment', for whom every impression, regardless of how strongly it may have captivated their consciousness, will *not only* be immediately supplanted by another, but its effects will *also* be completely deactivated; and conversely, those of a more grounded nature, for whom everything, once it has entered the consciousness, sticks, in such a manner that it, even without reappearing in one's memory, will make its proportional contribution to all their subsequent thinking, feeling, and doing.[2]

2 Heymans, G. (1932). *Inleiding tot de speciale psychologie.* De Erven F. Bohn. (p. 30, my emphasis)

In other words, some people live completely in the moment because they process information quickly and completely, so that aftereffects have less of an impact. Other people process more slowly and tend to dwell on information, making their aftereffects more pronounced. It is important to emphasize that there is no strict, binary distinction between the two types; everyone employs both their primary and secondary functions at all times, otherwise they would be unable to live their lives in a normal way. This is why the theory makes use of dimensions rather than a strict demarcation. There are individual variations in which function is more dominant, and this shines through in how someone lives their life.

A strong primary function makes it likely that the central consciousness is fully occupied by immediate impressions of the moment. This makes it easier to assess and adapt quickly when a new challenge arises. Conversely, an important effect of a strong secondary function is that it promotes *unity* and *consistency* in thought and action. This is because previous experiences are taken into account to a much greater extent in all future activities. The consistency furnished by a strong secondary function results from the central consciousness being swayed less by moment-to-moment changes in its immediate impressions. Instead, the aftereffects of previous thoughts and experiences linger and occupy a greater part of its attention.

Another side to this is that the accumulated aftereffects of mental contents have a *dampening* effect on the immediate perception. A strong primary-functioning type is therefore better equipped to absorb all the relevant information in their current context. They are essentially more *open* to the situation at hand, and can thus more quickly and accurately understand its demands and respond accordingly.

To conclude with the definition of the first dimension: Secondary functioning refers to the extent to which perceptions, representations, and emotions retain their effect on the mental complex after they have left the central consciousness, *relative* to their importance.

## 1.2 Perception, memory, and association

So far, we have distinguished between our lived experience in the moment, which gives us a sense of being in the world (the central consciousness), and the rest of the mind where these experiences linger for varying amounts of

time (the peripheral consciousness). Now, we move on to how the mind is connected to the external world through the senses. To understand this connection, it is good first to consider the terms 'sensation' and 'perception'.

Perception and sensation describe two different concepts. We *sense* the information that is directly imparted to us from the world around us, such as feeling a texture, seeing different colours, or hearing musical notes. *Perception* is the synthesis of all of these sensations into a single piece of 'mental content' that we experience in our central consciousness; in other words, we perceive things as a coherent whole, such as a table, a landscape, or a piece of music. Combinations of sensations can be organized into perceptions in different ways. For a table or a landscape, this combination (of colours and shapes) is organized across space; for a piece of music, it is organized across time.

Once we walk past the landscape, we no longer actively perceive it. The mental content produced by the perception will start to fade from the central consciousness as soon as our senses cease to receive the relevant input. What we perceived is not completely removed from the mental complex, however. The view has made an impression on us, and leaves a trace, which makes it possible to recall the view later. We can think of this as the *storing* of the contents produced by the perception in the peripheral consciousness. These contents can then, in appropriate circumstances, be recalled in the central consciousness. The ability to call back these earlier experiences is often referred to as *memory*.

## Memory

Memory is an essential feature of the mind. We inevitably need to draw on previously acquired impressions to deal with present and future situations. But how does memory work? Why are some people good at it, whereas others seem incapable of remembering basic information? And why do memories related to certain kinds of subject matter seem to be so much more vivid and detailed than others? To discuss these questions, we will distinguish between three phases of the memory process: storage, retention, and reproduction.

### Storage

In order to investigate memory, researchers have developed 'reproduction tests'. These tests require a participant to memorize a series of syllables with

no real meaning. The person has to read this series of nonsense words, and repeat them back until they are able to do so without error. The better someone is at memorization, the fewer repetitions they require.

The striking result was that there was greater variation in each individual's performance on iterations of this test than between the overall results of different people. This implied that there are very little inherent differences between people in terms of their capacity to memorize nonsense information. According to these findings, everyone would be equally capable of absorbing these kinds of impressions in their memory.

The most important factor determining performance on this test turned out to be *attention*. The participant's ability to focus their attention without becoming distracted was an important prerequisite to recalling the information later. This is also apparent in daily life. When trying to explain something to a listener who becomes distracted, it will likely be necessary to explain again because the information was not properly absorbed. A lack of attention distorts the uptake of information.

However, the researchers also found that it was possible to facilitate storage. If the participant managed to make incidental associations between the nonsense syllables and real words, this helped them to remember the sequence. In cases where real words were used in the test, recollection was easier when the words were connected to the participant's personal interests. Again, this is easy to recognize; it is easier to remember information when it is interesting. The effects of associations and interest can also reinforce each other. An expert learns a lot about a certain topic because they are interested, and as their knowledge grows, more associations become available which in turn make it easier to store new information.

### Retention

Once an impression has been successfully taken in and stored, it is *retained* as a memory and may be possible to reproduce at a later point in time. How well that goes depends primarily on the length of time that the memories are kept. Generally speaking, memories fade with time, making older ones harder to reproduce than newer ones. But this is not always the case, as some counter examples can easily show.

As we have seen, an important precondition for good retention is that the information is properly stored in the first place. However, the ability to store new information can be impaired — either temporarily (e.g., due to intoxication) or more permanently (e.g., due to old age) — without any impact on the retention of old memories. Conversely, there are circumstances in which someone can learn new information easily, but will forget it quickly. For example, when grocery shopping, we are only likely to remember where the car was parked on the current trip. This is probably advantageous, because remembering all the previous trips would only lead to confusion. A less desirable example is cramming right before an exam, then forgetting most of the material soon after the exam is over.

Both of these phenomena can be explained by the fact that the more time we spend on studying the information, the more time it has to link to other mental contents by association. If these associations extend into more diverse categories, so much the better, because more extensive integration of new information with existing knowledge makes it less likely to disappear or fade from memory. That is why cramming tends to be much less effective than distributing periods of study over a longer timescale.

Even when memories are retained for an extended period, their accuracy can vary. Upon recall, *memory alterations* can occur: when retelling and remembering events — unnoticed and unintended — memories become mingled with imagination. This is because there is always a degree of selection (and thus selectivity) in the recollection. It is impossible to provide an account of an event without colouring the truth to a smaller or larger extent. One reason is that people are necessarily central to their perspective on events, and are therefore likely to overemphasize the part they played relative to what actually occurred. In retelling the story, they may sprinkle the narrative with additional details, and make what happened sound more curious or striking than it actually was. This is also why two people in conflict with one another often present very different stories. It does not necessarily mean that either or both are lying, but that they stored and remembered the events in different ways.

### Reproduction

Although an impression may have been perceived and stored in the memory, and then successfully retained over a period of time, there is still no guarantee

that that it can be successfully reproduced. There are two central elements that affect the reproduction process: the accessibility of the memory and its vividness.

Even when two memories have been stored equally well, they may differ in their *accessibility*. This refers to the ease with which those memories can emerge in the central consciousness at the appropriate time. This might be the result of an exertion of the will, that is, an explicit wish to recollect certain information. But information can also be retrieved in other ways, such as through incidental association or habit, or in response to an earlier decision.

Again, different individuals display varying aptitudes at reproduction through each of these mechanisms. Some may be better able to come up with appropriate examples or citations at will. Others — or indeed some of the same people — may display a strong capacity to remember through force of habit, such as to charge their devices each night or collect their umbrellas when they leave a venue. Finally, there is the prior resolution to recall information, such as to ask a friend a question as soon as we encounter them, or even to wake up at a specific hour. Certain individuals may always remember to do something they previously planned, while others regularly forget.

The secondary function plays an important role in this process, which, after all, is mainly concerned with the ease of retrieving information from the peripheral consciousness. However, accessibility is not only influenced by the *capacity* or *strength* of the secondary function. No less important is its *organization*: the 'system' or 'logic' according to which the information was stored. In some individuals, the peripheral consciousness must resemble a well-organized bookshelf or wardrobe, in which the objects that belong together are placed together. For others, everything is mixed up in a big mess. The required information can be found with sufficient effort, but it may be hidden by or entangled with other, irrelevant material.

A large source of individual differences is related to how pieces of information are linked to each other, in other words, how associations are made. The potency and exclusivity of the associations are essential for this organization process to take place successfully. It helps to be fully attentive when integrating new information with the old. This way, when the time or situation arises for it to be retrieved, this association exerts itself more strongly than all the others, allowing the information to be found more quickly.

A few final words regarding the vividness of reproduction: There are differences in the extent to which individuals are able to fully imagine and give a detailed description of a previously perceived scene. Researchers have investigated this by asking people how clearly they could imagine everyday objects on the breakfast table. Did they see them with sharp or vague outlines, with or without colour, and would they be able to draw them?

The answers showed how different these recollections could be. Some participants resolutely declared that they were able to envision the objects in their memory just as clearly as when they actually observed them. Others wrote that they of course knew what the objects looked like, but that it was not possible to visualize them. Some of these latter participants were so convinced of this impossibility that they believed they must have misunderstood the question.

To conclude this discussion on memory, a brief summary of the process is as follows. First, something makes an impression on a person. In order to remember this impression, it must be stored safely so that it can be recalled at a later point in time. Finally, that impression can be reproduced in the appropriate circumstances. In all of these steps, variability in the effectiveness of memory between individuals can be found. These differences are found mostly in the following three stages: the ease with which an impression is taken

up into the memory (*storage*), the period of time and the accuracy with which a memory remains stored (*retention*), and the ease and vividness with which it returns to consciousness when needed (*reproduction*).

## Stream of consciousness

From the infinite amount of impressions that are stored in the peripheral consciousness over time, irregular bits and pieces find their way into the central consciousness. Whether bidden or unbidden, fully or only partly conscious, this process is often running in the background — the so-called 'stream of consciousness'.[3] What, then, determines whether this occurs, when it occurs, and which impressions are activated?

### Different kinds of associations

When a thought arises, the explanation for it can often be found in the 'associations' that exist between previously stored and newly experienced mental contents. These associations are based on two types of links. The first relates to the fact that one representation is more or less similar to another, such as when a portrait or picture reminds us of the person depicted in it. These are *associations through similarity*. The second type is *associations through experience*. When two mental contents occur together in our earlier experience, they automatically become linked together. For example, the first lyric of a song brings the second to our lips, or one person makes us think of another person whom we have met in the same company.

In both cases, any one content has the (stronger or weaker) tendency to recall or reproduce an associated thought into the consciousness. However, since each is associated in both of these ways with numerous others, we might expect an infinite flood of associated mental contents. Luckily, that does not happen because the central consciousness has a very limited capacity. Therefore, only very few of the potential associations can emerge.

3 Heymans calls this process '*voorstellingsverloop*': literally 'representations stream', but 'stream of consciousness' or simply 'thinking' may be the best translation.

### The weight of mental contents

In addition to these two types of associative relations, there is a third factor that impacts the stream of thought, which relates to the thought *itself* rather than its *link* to other mental contents. Specifically, each piece of mental content carries a certain *weight*. This weight determines the likelihood of a representation entering the central consciousness, and can have effects for shorter or longer time periods, or even permanently.

The transient version of a thought gaining a certain weight is apparent when it comes to emotional contents. Recently received news, especially when it is particularly exciting or sad, does not need any associative help to remain actively on our mind. Receiving a very high (or low) grade in school can make someone especially preoccupied with this news for a time. But even when a representation is not of an emotional nature, certain thoughts can remain 'stuck in our mind' for a time due to recency, repetition, or strong associations. We may think of a joke, a line of verse, or a melody that can be hard to get rid of for days or even weeks at a time.

A more permanent version of the greater relative weight of certain content presents itself in all kinds of small peculiarities and habits. Everyone has particular mannerisms or directions of thought towards which they are naturally inclined, such as the use of certain words or sounds, or specific gestures during a conversation. These habits and the ways they are expressed might never become fully conscious. Although it is not always directly apparent, habits often have an emotional basis. A gesture may express excitement while some words or mannerisms make us feel at ease.

### Imagination

The final element of our discussion on the 'stream of consciousness' is the concept of imagination or fantasy, which essentially describes the reproduction of earlier contents in a new way. This can happen receptively as a result of external input, such as when we read a story and imagine what the world described in the book might look like. It can also take place productively, without external guidance. In this case, the imagination is based on contents that are already present in the mental complex. In other words, imagination is about actively shaping new ideas.

What distinguishes imagination from memory is the production of a completely new arrangement of old elements. It is the putting together of things that have never before been connected, or the taking apart of what has always been one. This often occurs more or less aimlessly, like when a child is lost in thought while daydreaming. But it can be also be very purposeful when guided by a goal: to solve a problem, or to produce a work of art. All these actions require a certain amount of creativity. New ideas need to develop and link, typically requiring the creation of new associations and the pruning of old ones.

*Individual differences*

The way in which the imagination works is by its nature a very personal and individual thing. No one is in possession of exactly the same mental contents, and even if they were, these contents would have different links, associations, and importance attached to them. Therefore, the chances of two people ever having the same exact stream of thoughts are very low. But besides the available mental materials, there are some other ways in which individual differences shine through in this imaginative process.

The first difference concerns which type of association is most prominent in the thought process. Some have a slight preference for association by experience, whereas others are more prone to association by similarity. Generally speaking, associations by similarity are more conductive to a vivid imagination than those by experience. The reason for this is that, perhaps somewhat coun-

terintuitively, 'similarity' can mean very different things. The categories of input that might evoke similarity are almost infinite; it could be the smell, sound, feel, or look that is similar. Even within the purely visual, it might concern a similarity in shape, colour, texture, and so on. 'Similarity' is thus a rather abstract way of linking two thoughts, whereas association by experience is more straightforward because the two occurrences are linked by time: first one thing happened, then the next, and the association is established. The latter process is quite concrete by comparison, leaving less room for the creativity required to see things from a new perspective.

The second important factor for individual differences regarding imagination is emotionality, because the emotional weight of mental content grants it an increased vividness. As such, an 'emotionally weighted thought' is better able to capture someone's attention and hold their concentration. In other words, we can say that emotionality is an important ingredient in interest, and interest is in turn essential in concentrating the attention. Emotionality is therefore instrumental in guiding the stream of thought, and determining its effectiveness to fulfil a certain aim. Whenever the stream of consciousness is used in a purposeful way it is often signified as *thinking*, and as the results of an intellectual process.

## 1.3 Intellectual functions

Most people have an idea of what intellect is, yet it can be hard to define. Generally speaking, when someone collects and uses available information to draw purposeful conclusions, we call this an intellectual achievement. This process can take many shapes: it can concern rational argumentation, but it can also happen in a less conscious, more intuitive way. A solution or insight can arise from knowledge already present, but it can also be reached by asking others for help. Further, intellectual functions can lead to different results: a clearly defined thought or line of conversation, but also an action towards a goal.

It can be employed to resolve a difficult situation, solve a mathematical problem, or understand a solution proposed by others. It might concern correctly judging a person's character at first glance, making an accurate medical diagnosis based on a few symptoms, or unifying a set of unconnected facts into a single perspective. When someone invents a machine, finds suitable

words to calm down a rowdy person or crowd, or puts their opponent in a tight spot during a debate — all of these can be considered intellectual achievements. The common denominator for all of these achievements is that a person adequately uses information to arrive at new insight.

Many basic mechanisms in the thinking process are the same for everyone. Individual differences are largely dependent on *circumstances* that can influence, for better or worse, how a thought process unfolds and whether it is effective. The conditions that can facilitate or disrupt the process will be discussed in two parts: conditions that are relevant *before*, and those in play *during* the thinking process.

## Before the thinking process

### Possession of information

The first consideration is whether someone *possesses* all knowledge relevant to the case at hand. The completeness and precise applicability of the knowledge naturally plays a significant role in how effective the thinking process can be. It is important to take prior knowledge into account, to make a distinction between the quality and quantity of obtained information, and to consider how effective someone is at applying this information. The possession of information is often overlooked, which can lead to mistaken assessment. In such a case, the intellect may be judged as lacking when the actual problem arises from a lack of prior knowledge.

### Availability of information

Possessing relevant knowledge is an important precondition for a successful thinking process, but it is not sufficient. The knowledge must also be *available* when needed. There can be temporary as well as more permanent reasons why knowledge once obtained might not be accessible at the right moment. A temporary lack of access might emerge from something else occupying the attention, for example. A school student may have correctly learned the answer to a question, but be unable to produce it when called on if they are distracted. Preoccupied with exciting plans for the afternoon, they might not have enough focus to reproduce the right answer from memory.

### Emotionality

As this example demonstrates, emotions also play a role. If someone is very anxious or excited, their attention will be drawn towards the source of these feelings, interfering with the ability to direct their attention elsewhere. On a broader level, emotions tend to confer more weight on certain types of mental contents than others. It tends to overemphasize information that fits in well with the feelings, while diverting attention away from conflicting input. Here, we may speak of a strong bias or prejudice.

Bias can make someone focus on a particular side of an issue while blinding them to other angles. Bias is a bigger risk in strongly emotional personalities, and in contrast with distraction it represents a longer-term limitation on the ability to access information. Age is also a factor, because people grow more comfortable and complacent with certain viewpoints over time. Topics that elicit strong emotional reactions, such as politics or religion, are more likely to be affected by bias. However, once someone is aware of this risk, they can also take efforts to mitigate some of their biases. For example, they could actively look for evidence that contradicts their own beliefs.

## During the thinking process

Even when people possess similar levels of knowledge, their ability to apply it successfully can vary significantly. The issues discussed just now — prior knowledge, attention, and bias — are not, strictly speaking, considered part of the intellect, but are rather *preconditions* for the intellect to operate. Now we have arrived at the differences *within* the thinking process itself. These are the factors that determine whether the available information is used effectively.

Differences in intellect depend on three factors: interest (how interested is someone in thinking about a particular issue?), imagination (how creative is someone in coming up with responses or solutions?), and finally the secondary function (to what extent is someone's thinking affected by impressions from the past?).

### Interest

To effectively invest mental energy into a topic or problem, we first have to care about it. Without interest, it is much harder to focus attention in the right direction and to protect it from distractions. If we do manage to concentrate

despite our lack of interest, our engagement is likely to remain at a more superficial level. Due to a lack of curiosity, we would be satisfied with a general impression of the information and not integrate it as successfully. This can again be illustrated by the example of students memorizing only what they need for an exam. More often than not, this superficial manner of study leads to the material being forgotten as soon as the test is over. For the same reason, people can appear intelligent to very different extents when dealing with different topics.

Finally, the harder or more complex the problem or material at hand, the stronger and more durable the interest needs to be able to concentrate the attention. This goes both for the *receptive* work of a student as well the *productive* work of a great inventor. When a problem is more difficult, we need more motivation and concentration to unravel it. In other words, complicated tasks require our full attention and effort. This is why interest also plays a role both in the immediate 'presence of mind' (*tegenwoordigheid van geest*) necessary to swiftly find a solution for some sudden difficulty, as well as in the long-term construction of a comprehensive theory, which might require an entire lifetime.

### Creativity and Imagination

The second important factor for the intellect is a vivid imagination. It is common to place imagination and rationality in opposition to each other, and to see, for example, artists as strictly creative and scientists as strictly rational. However, that supposed dichotomy completely disregards the important role that creativity and imagination play in professional work as well as in daily life. Before we can provide an insightful explanation of a curious phenomenon, or a fitting word of comfort to someone in need, we need to come up with 'new' ideas for how to formulate or phrase it.

It is 'new' because coming up with something cannot happen through the direct application of an already known method or set of steps, as would be the case when solving a mathematical equation. We need what we might call a 'lucky draw'. Without a clear awareness of the different alternatives that present themselves in our mind, we make an intuitive selection of an appropriate explanation or phrase, often in a split second. In order to make that selection, an important requirement is that those options actually present themselves.

That is, a number of alternatives that could potentially contribute to a solution need to become conscious before they can be evaluated. Depending on how that evaluation progresses, these potential answers or solutions are accepted, rejected, altered, or kept in mind for future consideration.

The ability to conjure up these novel phrases, solutions, or insights exists to very unequal degrees in different individuals. Most people stick with what they have encountered before, and find it difficult to overcome the associations that have solidified. They are unable to imagine words and ideas connected in different ways than those in which they usually appear. However, to be truly imaginative or creative requires the ability to take apart ideas and put them together in a different way. And all of this must enter our awareness in sufficient clarity to assess whether it will be helpful in finding a solution.

This applies to legendary discoveries and fundamental theories as well as to the minor tasks we perform in day-to-day life. Almost no effective sentences can ever be spoken without some level of novel reassembly. If words always appeared in the exact same relation to each other, then our conversations would become tedious very quickly. At the very least, we need to put the words together in slightly new configurations to have even the most basic conversation.

### Secondary functioning

However, the imagination requires a certain amount of guidance to function, and this brings us to the third important condition for successful intellectual performances: a proper development of the secondary function.

Suppose that someone is trying to convince us of their position, and we use our intellect only *receptively*. In order to follow the sequence of arguments, a certain aftereffect is necessary. The entire progression of information put forth in the arguments must be taken into account simultaneously. However, the arguments are presented to us consecutively, and due to the narrowness of the central consciousness (in other words, the very limited capacity of our attention), each preceding argument is 'replaced' by the next. Without any secondary function, only the most recent argument would ever signify. Such an extreme case does not exist, but people who are strongly primary functioning might come close. They might struggle to maintain their concentration through the sequence of arguments, and are more likely to 'lose the thread' sooner or

later. However, if they had all the arguments in front of them at once, they might be able to follow them without any trouble.

The secondary function is no less important to our own independent thinking. We have discussed intellect as the ability to accomplish a certain goal, or to find a good solution to a problem. Interest and imagination can therefore only contribute to an intellectual achievement when they are effectively guided forward by this goal or problem. When seeking the solution, it was proposed earlier that what follows is an cycle of concepts and ideas summoned by association. They are investigated piece by piece to assess how appropriate they are for the objective. What keeps these associations on the right track and hinders digression is the *aftereffect of the goal*. Although it is probably outside of direct awareness, the goal continues to work from within the peripheral consciousness as a constant driver of association. In other words, it facilitates the emergence of further ideas associated with the objective, and inhibits that of unrelated thoughts.

However, the secondary function still guides and supports the thinking process when not pursuing a specific goal. Whenever we navigate life and all its challenges, we depend on our experiences and previously acquired knowledge. Everyday examples include choosing the right words or considering the circumstances when making a decision. This is rarely a fully conscious process, but instead depends on the secondary functioning of previously acquired mental contents. And the same mechanism is still at work in more complex tasks, such as formulating a theory based on various sources of information.

To conclude, we can summarize the intellectual process as follows. Information acquired in the past resides in the peripheral consciousness. This information is safely stored and might be difficult to reach, but is linked to other information by association and thus leaves a trace. When we aim toward a certain objective, any potentially relevant mental content gains an increased potency and, in turn, strengthens other related content by association. Without focus, this might lead to an infinite cascade of ever more remote (and mostly unconscious) thoughts, but thanks to the aftereffect of the goal, we can limit our stream of thoughts to the matter at hand. Then, as all these pieces of mental content are being activated, they are intuitively assessed. Only those deemed sufficiently relevant are likely to enter the central consciousness and

gain our explicit attention, after which we can engage in what we might call a 'rational' thinking process.

## 1.4 Emotions

Emotions refer to a distinct group of phenomena that are strongly related to other psychological functions (such as perceptions, imaginations, intentions) but cannot be reduced to them. This category contains the experiences of joy and anguish, hope and fear, anger, embarrassment, love, and so on. Unlike the functions discussed above, emotions have a unique aspect whereby they incorporate elements of desire or suffering, liking or disliking, and many others. It is difficult to capture precisely the richness and complexity of emotions, yet it is possible to give some insight into how they operate. In this section, we will discuss how they affect everything else taking place in the consciousness, and how emotionality is another source of individual differences.

### The emotionality dimension

The second dimension of Heymans' Cube is that of susceptibility to emotions. A person is considered to be more sensitive when they experience emotions more easily and with greater intensity than others. Their sensitivity can be broadcast by vivid facial expressions and gestures, strong words, or crying and laughter. But emotions are not always apparent from the outside. They can be hidden or 'masked', even though they might be having a strong effect internally. The internal expression of emotions entails 'narrowing' and 'colouring' the normal course of thought and imagination.

On the opposite side, it is also possible identify those who are less sensitive. They are usually inclined to react in a calm or indifferent manner, and rarely

appear shaken or off-balance. Internally, their thinking and associations are not coloured by their feelings as much. This means that there is less selectivity, and mental contents are weighted more equally. Between these two extremes there are many different variants. A person can be referred to as emotional or non-emotional depending on which extreme is closer to their experiences.

Emotionality is stable to a certain extent, but may also fluctuate based on the circumstances. For example, increased emotionality occurs when people are under the influence of alcohol, at which times the temperament may take on a more cheerful, aggressive, or sentimental colour. Similarly, conditions such as stress and exhaustion may also play into emotionality.

## The progression of emotions: Onset and duration

Like the intensity of emotions, how quickly they ebb and flow can also vary greatly. We can distinguish between the onset of an emotion (how long it takes for the emotion to appear) and its duration (how long it takes for the emotion to subside).

### Onset

In some cases, the onset of an emotion is immediate: it enters the consciousness in full strength almost simultaneously with its cause. In others, emotional reactions develop more gradually over time. It can even take so long that some people may only experience feelings of anger or fear retrospectively. In this case, it is also likely that the effects will linger long after the event that sparked the emotion has taken place.

The main factor that influences the period of time between the cause and the manifestation of an emotion is the *dampening effect* of the secondary function. This dampening is caused by the aftereffects of mental contents from within the peripheral consciousness, and means that emotions will arise more slowly. We may recognize this mechanism — or rather, its absence — in children, whose secondary function is not yet fully developed and who are therefore more primary-functioning than adults. Children are not yet subject to the inhibition from a large accumulation of mental contents. Therefore, children are more immediately absorbed by their emotions, and will express them in full force. Conversely, individuals with a stronger secondary function have

more to occupy their minds already — a greater quantity that has to be 'put aside' before the emotion can be fully processed. 'Cleaning up' like this requires time, leading to a delay in the *onset* of the emotion.

### Duration

The primary and secondary functions have a similar effect on the *duration of emotions*. For those who are primary functioning, emotions are inhibited to a lesser extent and also apply little inhibition themselves. When the cause of an emotion has disappeared, or when attention has been distracted from it, the emotion disappears quickly as well. For those who are secondary functioning, the reverse is true because the aftereffect of the emotional content lasts much longer. They might have reconciled with their partner after a big fight and exchanged apologies, and the issue may appear to have been resolved. Yet, it can take them considerably longer to process their feelings and to fully let go of their anger or regret.

So the *time* it takes emotions to reach peak intensity, and then to fade away, is strongly tied to the *secondary function*, while their *intensity* is at the core of the *emotionality* dimension. It is important to distinguish these two to forestall a common misconception. Often, the fleeting nature of emotions is taken as evidence of a lack of emotional intensity. In a given individual, it is true that weaker emotions will subside more quickly than more intense ones. However, when comparing different people this interpretation is flawed. There are plenty of people whose emotions display all the signs of great intensity, but the feelings still pass by quickly (e.g., hotheads). Similarly, those of a calm nature may nevertheless carry a disappointment with them for a very long time. It is therefore important that a correct assessment of emotionality takes into consideration only intensity, and does not confuse it with duration, which is affected by secondary functioning.

## The narrowing effect of emotions

At the start of this section, we briefly introduced the idea that emotions — in addition to the *external* expression we commonly associate with the word 'emotions' — also have an *internal* expression in the consciousness. We can summarize this internal expression as the 'narrowing effect of emotions'. It operates in two ways: by *colouring* and *selecting* other mental contents.

Emotionality has a strong influence on the normal course of thought and imagination because the presence of an intense emotion can colour everything else. Highly emotional people may recognize that when they are feeling particularly sad, everything suddenly appears disheartening. And when their mood has improved after a good night's sleep, what appeared insurmountable yesterday might seem trivial today. The same effect applies in reverse. When we are 'on top of the world', everything looks great, even situations that might have otherwise offered cause for concern. Therefore, one side of the narrowing effect is this tunnel vision, whereby intense feelings can colour or 'infect' other mental contents with their emotional weight, and reinforce the feelings and perspective already in effect.

The second part to this is that when we feel very strongly about something, we become more likely to select and process only information that is in line with that feeling. At the same time, we unconsciously avoid the thoughts, arguments, and memories that conflict with it. On an intellectual level, this may be expressed by cherry-picking the evidence that supports our claim, while disregarding any evidence to the contrary. On a more subtle level, these small degrees of selectivity may creep into our thinking process all the time, for example when we have a biased view or interpretation of events. For persons with high emotionality, this selectivity strongly directs the stream of consciousness.

### The direction of emotions

Both the colouring and selecting effects of emotions reinforce the emergence of particular kinds of mental contents over others. Generally, this process pushes our emotions in a specific *direction*. The most straightforward manner of orientation concerns *positive* and *negative* emotions. Someone might be(come) more highly susceptible to the emotions of either pleasure or displeasure, in other words, their thoughts might be predominantly positively or negatively oriented — the typical optimist and pessimist. In a similar vein, we might differ in how we approach others, being more inclined towards friendly or hostile interactions.

Besides feeling 'up' or 'down', emotional life can also extend more horizontally, meaning that the *source* of emotions might be different. Pleasure can be derived from an *external* stimulus, such as food, drink, or entertainment,

but can also result from *internal* mental impulses, for example when contemplating an eagerly anticipated event. It is therefore possible to distinguish between sensory and mental pleasure. This is also evident in the temporal dimension: sensory pleasure is most often oriented *in the moment*, while mental pleasures are more likely to be related to events in the *future* or *past*.

Due to the reinforcement of emotions, contents in one direction make others in a similar direction more likely; this has an enduring effect and leads to *habits of emotion*. As we grow more and more comfortable with a certain orientation or source of emotions, we come to favour this direction over others. Without a conscious decision to change this orientation, the emotional habit only grows stronger over time. This kind of feedback loop can extend in various directions; it can fuel faithfulness in love, or alternatively a persistent hatred, produce an unwavering belief in god or an unconditional pessimism.

## 1.5 Acting and volition

At this point, only one elementary function of the mind remains to be introduced: the volition. It is the element of will that largely determines how we act. Actions are how all the other elements previously discussed are expressed; by observing how someone acts, we can make inferences about what occupies their mind, the direction of their attention, and their emotional state. Moreover, we gain insight into their *character*. The term 'character' refers to the conglomeration of values, tendencies, and motives that drive a person — a significant factor in everyday life, because it is precisely these motives and values that we tend to appreciate or dislike in a person. It is important to note that character pertains to the collection of values *themselves*, and should not be confused with temperament, which is more related to *how* the character is expressed. Heymans' cube is a temperamental typology because it concerns how the values shine through the layers of emotionality and secondary functioning.

In life, it is common to make an effort to understand and predict others' behaviour. Often, we try to 'explain' a person's actions by applying certain descriptors. We may describe someone as altruistic or selfish, honest or deceptive, and so forth. For example, when a housemate is irresponsibly neglecting their chores, we might try to explain this by identifying them as lazy or selfish. But another explanation might be that they are busy, distracted, preoccupied.

Our chosen explanation makes a large difference in how we judge them. If we suspect their reason for not being conscientious is that they simply do not care about their responsibilities, we might judge them more harshly. However, if they *do* care about keeping their promise, but completely forgot about it during a busy day, or just got distracted by more enticing activities, then this might mitigate our harsh judgement at least a little bit. Therefore, it is important to contemplate how an action came about in a little more detail.

First, the term 'action' is meant here in the broadest sense, referring not only to actions that can be observed by others, but also 'internal' actions such as mental arithmetic. Any action is the result of a decision-making process. The process may be fully conscious in some cases, but more often it plays out on an intuitive or reflexive basis and remains largely unconscious. The process, very briefly put, is that we first imagine, more or less clearly, the outcome of our action, and then *accept* that as our objective. In other words, a desired goal or result arises, and then we may make the decision to pursue that goal, and finally, we act accordingly.

First, an idea — the goal that we may or may not decide to pursue — appears. This goal may arise from a direct perception. When someone is uncomfortably warm, or feels an oncoming headache, or sees a glass of water standing before

them, there is a good chance they will act on these perceptions by drinking some water. A goal may also arise from a suggestion by others, for example when a mother reminds her child to finish their drink. Without any direct external input, the idea might arise by association. When thinking about other things, we might spontaneously be reminded that it has been quite some time since we last had something to drink.

The second step after *conceiving* the goal is the *decision* to act. This decision is often based in our character, that is, in our tendencies, motives, and values. One of the most universal motives is to stay alive. Another motive is the pursuit of pleasant sensations. These are both likely bases for a decision to reach for a glass of water. Of course, we do not tend to think very hard about whether or not to drink some water; we might have picked up a glass before even realizing that we were thirsty. This shows that it is possible for the decision-making process to play out completely unconsciously. In this case, it also proceeds smoothly because there is no conflict of motives. When the decision-making is completely unconscious, meaning that we do not even consider or weigh our options and yet act anyway, it may be termed a *compulsive* act.

The decision-making process gets more interesting when multiple tendencies or motives within a person are at odds with each other. To explore the individual differences in how we arrive at an act, we will distinguish between factors relevant *before* and *during* the decision-making process.

## Before the decision-making process

When two people find themselves in similar or identical circumstances, the possible outcomes they can see may still be different. One reason for this may be that their *possessed knowledge*, which might inform the potential scenarios they foresee, is incomplete. Even if they have identical levels and content of information, it may still be *accessible* to different extents.

### Possession of information

When someone acts in a way that appears very strange or ineffective to us, the reason might simply be that they possess insufficient knowledge. We might have more experience, advanced information, or different methods that offer us a broader range of suitable options for action. When this information is lacking, the different ways someone can act are, of course, reduced. Some-

times young children 'play' with bugs in a manner that we might judge as cruel. We can watch in horror as they pull the wings from a fly without any consideration for the fact that they are maiming a living creature that might be experiencing excruciating pain as a result of their actions. However, if no one has ever informed them such actions will hurt the fly, we can hardly blame them for this unknowing act of cruelty.

### Availability of information

Even when two people possess identical information, there might still be a considerable difference in the *availability* of this information, or the extent to which they make *use* of this information in their decision-making process. We already came across some of the mechanisms that can influence this process in positive and negative ways. In the following, we will see how the two dimensions of the cube previously discussed play a considerable role here: the aftereffects of mental contents affecting the decision, and certain types of contents being privileged over others.

### Secondary function and volition versus automatic causality

One important influence on the decision-making process is the strength of the secondary function. Simply put, the existence and strength of the aftereffects of mental contents make it more likely that they will be included in any decision. Suppose that someone makes a promise. For people with a strong secondary function, this promise will constantly occupy a little space within the consciousness, until it is finally fulfilled and its aftereffect has faded away. For strongly primary-functioning types, the reduced aftereffect might mean it is quickly pushed out of their mind once something else has captured the attention. Five minutes after making a commitment, they may have forgotten all about it. Therefore, traits such as internal contradictions and conflicts between thinking and acting occur far more often in primary- than secondary-functioning types.

As such, the secondary function increases the probability that actions will be informed by a more complete overview of the relevant facts. When the aftereffects of mental contents have a prolonged lifespan, all motives can weigh in on a decision. For a primary-functioning type, it is more likely that only the more-or-less incidental facts apparent in the moment itself will be able to

exert their influence. Such a person may act on impulse, only to realize that in hindsight this was not the best move. Another, on the other hand, may always be held back by a vague feeling of resistance that suspends the decision-making process until that 'something' can be brought to the central consciousness and taken into account. This resistance thus facilitates giving due consideration to all the different aspects of the intended action, which should therefore better reflect what that person truly *wants* to do.

That brings us to the topic of *volitional* causality versus *automatic* causality. When weighing our options carefully, an act is more likely to reflect our values, beliefs, and character. Conversely, when making a split-second decision, for example because we are under time pressure or just acting on impulse, then such an action is much more likely to be regretted later, because it is not how we would truly want to act in ideal circumstances. In such a case, the act is *automatic*, rather than caused by the *will*. In practice, actions mostly fall somewhere between these extremes. Acts are rarely completely automatic, but it is also improbable that a person will fully contemplate all their motives and options before acting. Nevertheless, it is an important differentiation when questions of accountability arise. When someone blurts out a hurtful remark without thinking, we might not judge them so severely as when they are being intentionally insulting.

This differentiation is also helpful in clearing up another misconception. It is common to speak of people who are 'weak-willed' or who 'let themselves be controlled by impulses', or, conversely, as possessing greater 'willpower' and therefore being better able to 'overcome their impulses'. However, this is a mischaracterization, because a 'stronger will' does not help much if the will is not actually involved in the decision-making process. Someone might have a strong intent to do something, only to be distracted a moment later and do something else that they had not actually intended. Others might act in a purposeful way on a very weak motive. We must conclude that how purposeful the action appears cannot directly tell us how strong a person's will really is. Instead, some people are simply more inclined to act on the basis of an assessment of all available motives, whereas others tend to act on an *incomplete* overview of their motives.

### Emotionality

Emotionality is also a prominent factor in determining the strength of the will. In general, when emotional value is attached to a motive, that motive has a greater chance of being acted upon. In other words, emotionality is a strong and durable driver of actions. At the same time, emotions bring about a narrowing of the consciousness. When strong feelings are involved, options are weighed less carefully, and any reaction takes on a more automatic quality. In a heated moment, we may lash out at a good friend, then immediately regret it as soon as everyone has calmed down. In this case, we may say that we lashed out on *impulse*, and did not really mean to act this way.

Due to this narrowing effect, a person low in emotionality would be much more likely to hold their tongue and take into account — before it is too late — that they do not actually *want* to burn any bridges. Yet, feelings are still an important motivator for these non-emotional types. The direction of emotionality is also important here, because different areas of decision-making may be affected to very different extents by the narrowing of consciousness. This is why bias and extreme views are more likely to creep in when strong emotions are involved, while the same person may take a more nuanced view on other less sensitive matters.

## During the decision-making process

The aforementioned differences in acting all pertained to the question of which motives get the most opportunity to exert sway on the decision-making process. The rest of this section is about what happens *after* the decision has been made, and the intent to act in a particular way has been established. Even at this point, there are still differences in the probability that the act will actually be carried out. That is where the third and final dimension of the cube comes in.

### The activity dimension

Sometimes, people feel strongly about a matter, yet some kind of resistance seems to prevent them from acting on it. Other people may appear to care far less about something, but who nevertheless make a great effort to pursue it. In other words, when affected by motives of similar emotional value, certain people initiate action far more readily than others. Therefore, we may distin-

guish between those with active and vigorous natures, on the one hand, and those with slower, inactive natures on the other. Briefly put, the dimension of activity refers to the likelihood of someone acting, and the vigour of their action, *relative to* their motives.

We can consider this likelihood of acting from different angles. Some people generally act in a *resolute* manner, while others are more prone to *indecisiveness*. The latter may be the result of a conscious and careful effort to weigh all options. In some cases, this may occur to such an extreme extent that the individual cannot bring themselves to make any decision at all. People can also refrain from this conscious weighing effort and instead rely on their intuition — that is, on the endless array of past experiences stored in the peripheral consciousness.

If they rely on this unconscious process, they will likely reach a decision much faster. For important decisions, more time may be invested in listing all the pros and cons, while the intuition will probably play a larger role in acts with less far-reaching consequences. Yet, the power of intuition should not be underestimated. Given that any conscious consideration must happen within a very narrow space, the intuition in fact provides a much more extensive source of information to draw upon. Then again, an intuitive reply or decision can lead to problems when a justification is required.

Another expression of activity is that, once a decision is taken, some people show great *perseverance* even in the face of adversity, while others may be more

*fickle* and prone to giving up as soon as the going gets tough. Here, we are referring to the *durability* of the motivation, and how well commitment holds up over time. Like the speed of decision-making, the durability is positively influenced by the level of activity as well as by the secondary function. This durability is further enhanced by the motives informing the decision and their emotional weight. In this case, all three dimensions come together.

Motives have been mentioned frequently because they have a considerable impact on all phases of the decision-making process. Out of the endless variations of possible motives, people develop certain tendencies over time as to what motives they pursue. The last part of this section will explore these tendencies in more detail.

### The character, and the relative importance of motivational tendencies

One source of differences in the way individuals act is how various motives impact their will to different extents. People tend to 'feel' more strongly about goals of certain kinds than they do about others. The sorts of motives that are more influential on the will are what define the *character*. The huge variety of different motivations can be organized into four major groups: vital, egotistic, social (or altruistic), and abstract (or suprasocial) tendencies.

#### *Vital tendencies*

The category of vital tendencies covers motives that are pursued not as a means to an end, but as an end in themselves. In other words, they seek to satisfy some direct physical or psychological need, with *organic tendencies* as probably the first type that comes to mind. Examples include eating and drinking, as well as enjoying fresh air, physical exercise, smoking, sexual intercourse, and so on. Some people desire instant gratification (*gluttony*), while others do not mind postponing their gratification for a shorter or longer period of time (*moderation*). This is also related to the extent to which an individual is keen on conveniences and luxury, such as when going on vacation. Here, we may distinguish between the gluttons and the *connoisseurs*, who favour quality over quantity.

The second vital tendency is the *need for freedom*: the urge to be able to do whatever we want in any circumstances and not be obstructed in pursuing our desires. Some people feel so strongly about this that they can find any form of

external pressure unbearable, and struggle to go along with it even if the action actually aligns with their own goals.

The third type are the *mental tendencies*, primarily the *urge to occupy one's mind*. We might notice that some people are constantly seeking entertainment while others are more comfortable to just 'be'. The latter more readily tolerate longer periods without much stimulation. But this urge to 'keep busy' can come to expression in different ways: for example, some love to be constantly surrounded by people in social settings whereas others would prefer a more solitary existence. Or we might compare people high in activity who get restless when they temporarily have no work to do, with those of a more indolent nature who immensely enjoy the 'sweetness of doing nothing'. The *need to do something* can also take the form of all sorts of hobbies (arts and crafts, practicing science or arts to pass the time, participating in sports), or of the habit of sticking one's nose in other people's business.

There is also variation in how *selective* someone is about the quality of the content that occupies their attention. Certain people have a passion for aesthetics, a *need for beauty*, while others might enjoy whatever entertainment comes along equally well.

### *Egotistic tendencies*

The second major category is the *egotistic* tendencies. These are understood as the motives that involve placing the individual's own needs or values over those of others. We can make another division into three subcategories: *greed and thriftiness*, *self-love*, and the *desire for power*.

*Greed and thriftiness* can be described as the tendencies to acquire and conserve. The term *self-love* describes all tendencies that involve being evaluated favourably by others, whether in regard to some particular qualities like physical beauty, talent, or success, or to the personality as a whole. These tendencies include vanity, ambition for fame and recognition, and so on. The opposite of the pursuit of self-promotion is keeping to the background and preventing oneself from standing out.

Concerning the *desire for power*, it is possible to put power-hungry or domineering types in opposition to those of a more obedient or tractable nature. The latter are amenable and may be even *willing* to be told what to do and

how to think. Right in the middle, there are those who demand the power to control themselves, but are also prepared to respect the freedom of others.

### *Social or altruistic tendencies*

A third group consists of *social* or *altruistic* tendencies: pursuing goals that benefit others rather than themselves. Here, we may distinguish between individual-focused motives and group-focused ones, the latter of which are directed towards groups of individuals as a whole without focusing on specific individuals within that group.

*Love* is perhaps the most obvious of the *individual-focused inclinations*. This motive can occur with various nuances. It can, for example, be motivated more by physical or mental qualities, it can range from a more sensual passion to platonic friendship, or it may contain elements of compassion or endearment. It could also be founded in feelings of deep religious adoration or worship.

We may also consider *familial love*, which is the tendency to make sacrifices for blood relatives and place their needs above non-related others. In a similar vein, the preference for people of the same faith, political party, or nationality can be mentioned, which almost everyone displays to a greater or lesser extent.

In addition to these inclinations, we may still speak of a *general kindness* towards others. This tendency manifests itself as helping where help is needed, regardless of personal considerations. This helpfulness may also be extended to animals and sometimes even to plants.

Finally, there are differences when we consider the *relationships of an individual with their subordinates or superiors*. A boss may treat their workers well, but regard them as merely a means to an end; alternatively, the boss may see their happiness as an end in itself. And in the opposite direction, behind any helpfulness towards a superior, ulterior motives may also come into play to a lesser or larger extent.

### *Abstract or suprasocial tendencies*

The fourth and final major category is that of *abstract* or *suprasocial* tendencies. These are not aimed at any personal or collective wellbeing, but towards the realization of abstract principles. One abstract motive is the importance of and desire for *truth*. Some people place such an importance on honesty that they

might refrain from common formalities if these do not express their true feelings accurately enough. For example, they might adjust their salutations in a letter. Others refrain from ever telling white lies, even if they run the risk of hurting someone's feelings. Conversely, there are those who do not hesitate to tell lies, either for their own benefit or simply for convenience. And then there are those who, in the company of others, say whatever comes to mind and pay little attention to the accuracy or consequences of their statements.

There is a lot of room for nuance between these possibilities, and it is good to differentiate between direct and indirect falsehoods. There are many people who would not easily bring themselves to deliver a direct lie, but who might have no problem giving a false impression, allowing any misconceptions to live on. Some insist on delivering the truth regardless of circumstances, while others find it easy to deny or misrepresent a situation if it benefits themselves or others. There are also those in between, who are of the opinion that someone should never say anything they do not believe, but also that they do not always need to proclaim their viewpoint comprehensively on every occasion.

Reliability is another way in which truthfulness can be observed. This may concern reliability in keeping promises, agreements, or secrets. Some people take their obligations so seriously that, even when the circumstances have changed and the other party no longer has any interest in the commitment, they will still consider themselves bound to follow through on the original arrangement.

A second type of abstract tendency is the sense of *justice*. At one extreme, there are those whose sense of justice is completely overshadowed by opportunism, while at the other are people who adhere to what they consider just, no matter the cost. Finally, we may consider the *sense of duty*, which can manifest itself in various ways. This relates to the tasks someone is responsible for in society, such as dedicated performance of professional tasks, childrearing duties, or supporting their household through financial means and housekeeping.

All of these motives and values together constitute how a person would *want* to act in an ideal scenario. As such, they are at the core of what is called 'personality'. And if character is the core then temperament is the shell, because all motives are mediated by the temperament before coming to expression in an act. A person might want something very badly, yet still fail to act

on this desire due to their non-active nature, emotional preoccupation or impaired secondary function. Over time, everyone develops tendencies towards what kind of stimulation is likely to motivate their actions, and which psychological functions tend to dominate their mental world.

## 1.6 The relative strength of psychological functions

Over the course of this chapter, we have consecutively discussed perception, thinking, emotionality, and volition and acting. In this last section, we will pay attention to the fact that for any individual, *one function may play a more important role than another*. For some, the world is little more than a spectacle, while for others, it may provide material for reflection and emotional reactions. For others still, any experience serves primarily as an opportunity for action. Based on this relative importance, four types can be distinguished, each with a different emphasis: the representative type, the intellectual type, the affective type, and the active type.

First, it should be noted that we are not speaking of the degree of perfection or refinement of these functions, nor about the particular direction in which they have developed. We are merely speaking of the degree to which they habitually occupy the consciousness. In other words, we are now concerned with the mostly *unconscious* preference in what an individual notices and remembers, and where their thoughts tend to drift in their free moments.

There are various degrees of strength in these preferences. In some cases, one function seems to dominate and suffocate the others. In other cases, several functions are developed to a lesser or greater extent, or are employed mostly *in the service of* the dominant function. When the preference is not strongly pronounced, they may all develop more or less equally into independent functions. As is the case for most differentiations discussed in this book, extreme cases are fairly uncommon. Their descriptions serve primarily as a framework through which to understand observed cases on a continuous spectrum.

### Representative types

The *representative type* is characterized by a predominant interest in observation. Visual representations tend not to provoke a strong intellectual, emotional, or volitional response. They are often alert but quiet individuals, and can

be commonly found among collectors of all sorts. They like to pick up every new object they encounter, look at it from all sides, and, if possible, turn it inside out. But they are satisfied with the most superficial explanations for what it is, or what is for, or how it works. As observers, they are attuned to noticing even the smallest details, and have the ability to describe what they have seen in minute detail. Of course, not all good observers are representatives of this group; this category refers only to those for whom perception is the objective itself rather than a means to a different end.

For the representative type, their preference for the concrete and the visual is reflected in other mental functions. They feel more for individuals than for groups, and more for people than for general concepts. Their thoughts and actions are governed by immediate consequences and details, rather than by theories or abstract ideals. Furthermore, due to this preoccupation with details, their mental world is likely to show a certain fragmentation; all observations are held separately and do not gain coherence until they are understood as examples of a concept, as bearers of an emotion, or as means to achieve a goal.

### Intellectual types

A second group consists of *intellectuals*, meaning those who are primarily interested in theoretical concepts and ideas. Here, too, we must be careful to avoid confusing intellectualism with intelligence. Someone can be very intelligent and still only use their mind for practical ends, or conversely, be deeply interested in theoretical issues even if they are not very smart. Ability and preference for a mental function do not always go together. This type is relatively rare, as for most people thinking is only a tool to achieve other goals. Only for a few does the intellectual function become a truly independent function that plays a distinct role in their mental world. And for even fewer does it become the dominant function that displaces or subordinates others.

For the pronounced representatives of this type, thinking is a natural, daily, and constant activity. They take a continuous satisfaction in the thinking process itself, and find it difficult to 'turn it off'. They require little else from life than to be intellectually occupied, and are drawn to intellectual challenges in their leisure activities, including chess or other mental sports. Even their own emotions are sometimes investigated as a curious phenomenon, as if they

were studying someone else. They are attracted to studies that keep the mind focused on symbols, such as words and mathematical formulas. These are the physicians and lawyers who are primarily attracted to the 'interesting cases' that offer the opportunity to draw more abstract, theoretical conclusions, rather than having to focus on practical solutions.

### Emotional types

The third is the affective or *emotional type*. These individuals tend to react to everything they experience with relatively strong emotions. They rarely worry about the origin of these feelings, or what should be done about them. Instead, they find the simple presence of emotions comforting, such that emotions are not regarded as a 'problem to solve'. This mentality influences all their other thinking, as feelings come to dominate their mental world and colour every memory. Any mental content that does not carry sufficient emotional weight is easily forgotten. Their thinking, therefore, tends to consult only selective information, and in a similar vein, their decisions tend to be strongly informed by sympathies and antipathies, wishes and prejudices.

The acquired tolerance for highly emotional mental contents forms a habit that can create a pressing need for additional emotional material over time. When these individuals have nothing to be excited about or to grieve over, the result may be disorientation and a sense of emptiness. Therefore even strong feelings of grief or other negative emotions may be preferred over the absence of emotions.

### Active types

Finally, the *active type* is characterized by a paramount urge to act. The purest representatives of this type can be found among sportspeople, globetrotters, and professional soldiers. For them, there is little need for reflection on the mental world, and they do not assess the motives for their actions too carefully. Their primary concern is often merely that *something* be done, not so much *how* it is done. This also means that coherence is often lacking in their lives, though this may be different when the activity is connected to intellectual work or operates mainly in service to it. In that case, we might encounter leading figures in great enterprises: strategists, politicians, or leaders in trade and industry. On the other hand, when activity is combined with emotionali-

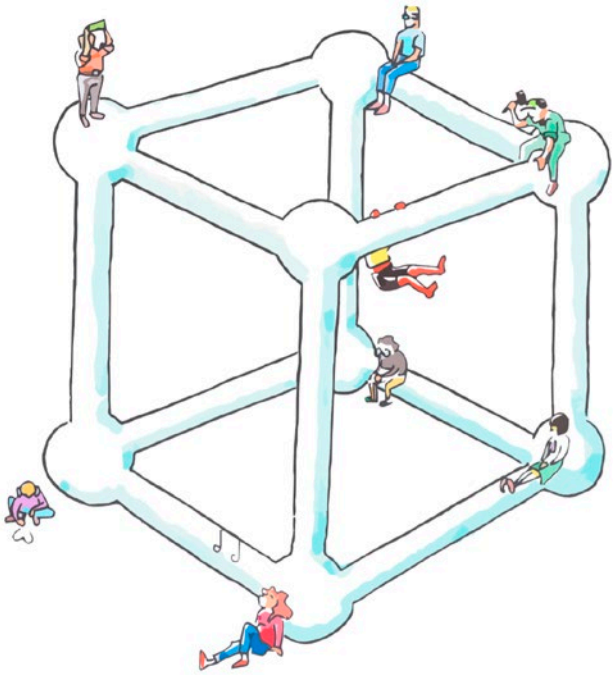
ty, we would expect hasty, forceful reactions that are poorly thought through and instead stem from impulsivity or intuition.

## Conclusion

This brings us to the end of the theoretical part of this book. We have discussed various psychological functions and how individual differences may arise in each. At every step, we have observed areas where levels of differentiation may occur. Now that we have a clear idea of the elements that make up the mental world, we may better understand how all these individual differences can create endless variation in humans' natures and behaviour. Each of us is attuned in different ways, which in turn may lead to considerable differences in how we perceive the world and are perceived by others.

This variety is awe-inspiring, but can also be intimidating. To make it a bit more manageable, Heymans identified three major dimensions of variation. Despite the countless individual differences discussed above, looking at just these dimensions can already explain a lot about the people and behaviours that we may encounter. This finally brings us to the titular cube and its resulting types.

# CHAPTER TWO: The Types



Everyone we encounter in life is unique. Despite this, some qualities tend to appear together more often while other qualities are almost never combined. With this endless variety in individual differences, it is fair to ask: 'Can we really sort people into *types*?' While some have argued that people can indeed be sorted into two or more categories, others say that we are all so uniquely different that trying to sort people is impossible. In this chapter, we will follow Heymans' theory, which tried to find a middle ground between these two extremes. He proposed three basic dimensions that can help us understand and describe the various people we might encounter.

This system is not meant to be understood as 'true' or 'naturally determined'. At most, it can be judged as more or less *useful* in understanding the world and the people around us. To arrive at this system, Heymans evaluated a long list of personality traits through surveys and literature studies, attempting to explain which ones tend to appear together. He found that placing a person in relation to three basic dimensions could explain many other tenden-

cies, characteristics, and typical behaviours. Combining these three dimensions into one three-dimensional model, he arrived at the 'Cube of Heymans'.

In the previous chapter, we examined the theoretical background to Heymans' system. The mechanisms behind all the basic psychological functions were discussed, including how differences in thinking and acting can come into play at every step of the process. Where the Theory chapter focused on the underlying mechanisms, this chapter discusses how these mechanisms come to be expressed.

Before delving into the eight types, a brief refresher on the three dimensions: *Emotionality* is the first dimension and refers to the strength of the emotions someone feels *relative to* the situations that caused them (see p. 30). The second dimension, *activity*, concerns the likelihood that someone will undertake action *relative to* the strength of their motives (see p. 39). The last dimension refers to whether the *primary* or *secondary function* dominates someone's mental life (see p. 13). In essence, it is about how previous experiences still influence and inform someone's current thoughts and actions.

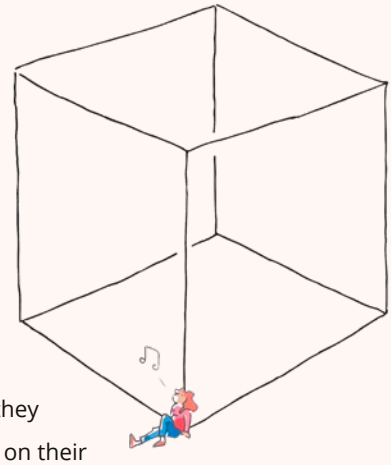
| Type | Emotionality | Activity | Primary or Secondary functioning |
|---|---|---|---|
| Nervous type | + | - | P |
| Sentimental type | + | - | S |
| Phlegmatic type | - | + | S |
| Sanguine type | - | + | P |
| Choleric type | + | + | P |
| Passionate type | + | + | S |
| Amorphous type | - | - | P |
| Apathetic type | - | - | S |

It is important to realize that each of these dimensions has its extremes. Someone can be *extremely* lazy, cry about *everything*, or *always* act and think impulsively. But it is much more common that people fall somewhere in the middle. Additionally, people experience personal growth (or degradation) and develop in how they think and act over time. Still, it is possible to discern certain characteristics more clearly than others, and thereby situate individuals in relation to each of these three dimensions to arrive at one of the eight types that Heymans identified. The types we will discuss are at the corners of the cube, where the three dimensions are at their most extreme. These eight types are the topic of the rest of this chapter.

## 2.1 The emotional, non-active types

These two types, the *nervous* and *sentimental*, are highly influenced by their strong emotions. Due to their low activity, however, they struggle to channel those emotions into action. That means that these types tend to brood on their emotions, which might interfere with other processes. One effect of this pre-occupation is that it colours their general perception, and steers it towards matters that they feel strongly about, resulting in a significant selectivity in their thoughts and observations. Another effect is that these types have a very lively imagination, which is often expressed through arts and conversation. What these types have in common is that they require strong emotional motives to initiate action, but are slow and reluctant to act when these are absent. Thus, they can be hardworking in some periods, but their overall work lacks steadiness and regularity.

## The nervous type (E+A-P)



Imagine you have a friend who regularly comes to you with wild ideas or talks about the difficulties they are facing. This friend is sharp and clever in conversation and can be intensely excited or distraught whenever they tell you about their achievements and challenges. They often approach you with an anecdote about something that has inspired them to pursue big plans or ideas. More often than not, however, they lack the perseverance to follow through on their plans. Your friend is therefore likely to start a new project before finishing the previous one. In the course of their life, they have switched jobs more than once, and struggle to maintain their hobbies for lengthy periods of time. This leads you to assess their manner of handling things as somewhat impulsive and disorganized. By now, you have learned that if you really need someone who is punctual and reliable, you would do better to ask someone else. For having fun, however, you are in the right place.

Your friend likes company, is quite a performer, and therefore easily connects with strangers. At parties, they often steal the show by performing striking impersonations or delivering convincing arguments and witty jokes. They make a point of enjoying life to the fullest, by encouraging the consumption of the finest foods, drinks, and entertainment. But you also notice that their mood can change very quickly. When they stumble upon something unexpected or disappointing, their lively manner disappears completely. From one moment to the next, they can shift easily from happy to sad, angry, or distressed. On off days, you can hardly believe how this usually so-expressive person now sits there disinterested and deflated. Luckily, you have learned from experience that it is not too hard to cheer them up again.

The nervous type is characterized by a strong primary function, meaning that their intense emotions are generally of short duration and are not dampened by the secondary function. This type, therefore, is (in comparison to all others) maximally excitable and irritable, and their emotions are the most intense. They easily fall into the habit of using superlatives. When their emotions run high, trying to make them see the nuances in a situation is often a pointless effort, and can even be counterproductive. However, once they calm down, their positive mood can be quickly restored. This type is therefore very easily reconciled and has a highly variable mood, changing from one moment to the next.

Their strong primary function makes for intense in-the-moment experiences, and this effect is further enhanced by their susceptibility to strong emotions. This combination leads to vivid and immediate impressions. Their senses can therefore be overly sensitive, with flashing lights or annoying sounds likely to severely interrupt their concentration. This high sensitivity can also apply to their internal experience of bodily sensations, which is why this type is inclined towards hypochondria, meaning that they can become very anxious about diseases or other physical ailments.

Because their central consciousness and lively emotional life are only lightly guided by the secondary function, this type tends to make a disorganized impression. However, the other side to this is that they can make quick and effective associations like no one else. They thus have a special talent for formulating ambitious plans or designing compelling narratives from thin air. In general, these are very sociable people who like company and are comfortable with crowds. They do the best impressions and make the best jokes. Many of this type become famous artists, poets, and musicians. These qualities and talents are especially pronounced when they are in a good mood, and they are dependent on this good mood to be productive.

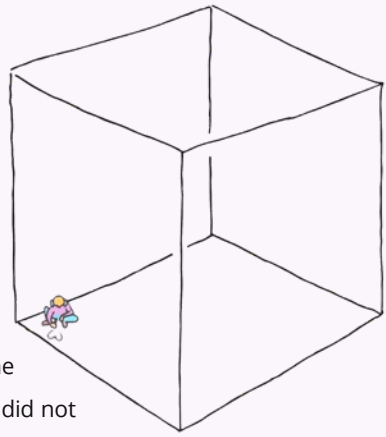
Concerning their intellect, their understanding tends to remain on a superficial level and lacks any particular technical insight. This type is unlikely to take a systematic or methodical approach, and the abstract sciences do not stir their interests. Their strengths lie more in artistic areas, where their strong intuitions are especially adept at eliciting the desired reactions from their audience. Astute and clever, they are particularly good at debating. However, their attention and memory are stimulated mainly by the details, and they have

trouble seeing these details as part of a larger framework. That is why fragmentation tends to prevail over structure in all of their talents.

This type is more reactive than active, often acting on impulse, and their motives need to be strongly informed by their emotions before they feel compelled to act. If they do feel strongly about an issue, they grow impatient quickly. However, if the emotional weight is absent due to disinterest or simply distraction (because distraction comes easily to this type), they are likely to remain passive and indecisive. Therefore, a positive emotional state is an important prerequisite for achieving their goals. Whereas some people can endure a lot before they lose their balance or composure, this type is unbalanced by minor setbacks or disappointments. Their activity is therefore also irregular; they work in sporadic bursts interspersed with periods of inaction.

The combination of primary function and strong emotionality results in interesting mechanisms in terms of their motives. Others may carefully compare various motives or plans for action. But this is difficult for the nervous type because their motives are experienced in a fragmented way. For this type, it is hard to weigh them carefully as the motives present themselves in succession: each new one fully captivates their attention, while pushing any prior alternatives out of the central consciousness. For that reason, they struggle to keep their impulses in check and to make well-informed decisions. Therefore, this type often acts in contradiction with their previous statements and actions, sometimes radically changing their convictions or plans for the future. This can make them seem untrustworthy, unfair, and hypocritical to those of a more consistent nature. However, it is likely that in the moment itself, they are being sincere. The seeming contradiction stems from the fact that between one moment and the next, their convictions may have shifted. That impulsivity could equally lead to big altruistic gestures as well as to petty, self-interested ones. Finally, this type appreciates the carnal pleasures in life and is prone to hedonistic lifestyles and substance addiction. In entertainment, they are drawn to shocking, mysterious, and intriguing content. At the same time, they are frequently inclined to help others and give generously to charity.

## The sentimental type (E+A-S)



Your friend has never really fitted in with their classmates. Often, you have noticed them observing social interactions with longing eyes from a safe distance. You suspect they want to belong and be popular, but they are just not the outgoing type and have always had the tendency to isolate themselves from larger groups. You have only recently managed to make a connection and learn about the person behind the silent appearance. It did not take long to realize that they might be one of the most reliable, honest, and compassionate friends you have ever had. They always take the time to truly listen, and face your highs and lows together with you. You were surprised and touched whenever they seemed to be even more angry and indignant than you were about some injustice that had befallen you. When you already had long forgotten and forgiven the matter, your friend still had difficulties letting it go.

You used to assume they were silent because they had nothing to say. However, now that the two of you spend more time together, the floodgates seem to have opened and they hardly ever stop talking. Rather than their inner life being empty, it almost seems to flow over. If you ask them a question, they offer an elaborate list of judgments, opinions, and deliberations. But you have noticed that they are especially drawn to more negative and pessimistic worldviews. Despite their habit of extensive analysis, they tend to be quite selective. You have come to understand that during all that time observing from a distance, your friend has developed very particular views and ideas, and it can be difficult for them to see things from a different angle. This is especially heartbreaking when they are being very self-critical, stubbornly painting themselves in a bad light. In these moments, you wish that for all the compassion they have shown you, they would be able to extend some of this compassion towards themselves.

The sentimental type is similar to the nervous type **(E+A-P)** in their high emotionality and low activity. However, due to their stronger secondary function, other characteristics become prominent. Their mood is more stable, so they are less irritable and impulsive, although still slightly above average. Beyond even the previous type, they are anxious, gloomy, and prone to brooding. Yet in other ways, the two are opposites. For example, instead of being highly sociable, sentimental types tend to be closed off, serious and punctual. No other type is so inclined to self-analysis and so likely to be dissatisfied with themselves. However, the reverse is true in their view of others. They are likely to idealize people and are honest, trustworthy, and reliable companions. Compassionate and eager to please, they often put the needs of others before their own. They prefer the quiet to crowds, and they enjoy nature and outdoor life.

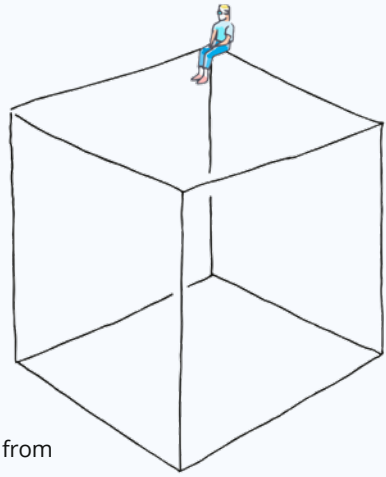
The characteristics of this type are very different from the typical behaviour of children; as a result, the sentimental temperament is recognizable already early in life. Continually preoccupied with big and complicated questions, they tend to have different interests from their peers and do not fit in well. Therefore, this type often becomes somewhat isolated. This reinforces their tendency to turn inward, attending to their lively mental world. In a pattern of mutual misunderstanding, they may believe that they cannot figure out their peers, while also feeling misunderstood. Whereas a higher activity could turn this isolation into a source of strength or even combativeness, the low activity instead mostly leads to pacifying reactions and emotions, such as shyness and anxiety.

Additionally, their low activity makes them indecisive. More thinkers than doers, the sentimental are not the most practical of people. They are not likely to misbehave or break the law, but if they are convicted, it is likely that the act came from altruistic motives or a sense of justice. Their strength lies in their intellectual qualities. With a lively inner world, they have a strong intuition and are prone to deep and philosophical reflection. Their memory and imagination are strongly guided by their feelings, however, making it hard for them to make objective judgments or view issues from all possible perspectives. Cold and dispassionate science is unlikely to attract their interest. While they enjoy thinking about abstract topics, this is more likely to be driven by curiosity or passion than theoretical concerns.

## 2.2 The active, non-emotional types

The next two types, the *phlegmatic* and *sanguine*, are the complete opposites of those just discussed. Both have low emotionality, which means that their emotions do not influence all mental processes. Instead, their emotions tend to be experienced only in the moment, after which they lose much of their weight and power. Specifically, emotions and feelings do not dampen, control, or colour the rest of their mental contents as much. The high activity means that mental contents concerning action and results are favoured instead, and are more likely to be carried through. From them, we can expect more consistent and reliable progress at work, be it long-term, persistent progress in the case of the phlegmatic, or vibrant and ever-changing goals for the sanguine.

## The phlegmatic type (E-A+S)



You would not describe your friend as the 'life of the party', and sometimes you seriously doubt they are enjoying themselves. But when you ask them, you know they are telling the truth when they say 'yeah..., it's a nice party'. They give you a smile and a meaningful look, and you know you do not have to worry about your friend being entertained. In any case, by now you have grown used to the fact that it is hard to see from the outside what is going on in their mind. But you also know that whatever is going on, they will maintain their composure and will not be easily thrown off by an unpleasant experience. In the face of serious hardship or conflict, they have always remained calm, cool, and composed.

You admire this ability and have often benefitted from their sober and down-to-earth approach to life. Whenever you were stressed or had a problem, their wise words helped you to calm down and gain perspective. And when you needed them, you would find them in their regular spot as always, steadily working. On the surface, they do not strike you as particularly productive or hardworking. Some of your other friends seem to be constantly bustling from place to place; in comparison, this friend could almost be described as slow and passive. Nevertheless, you know that they must be incredibly productive, because they always finish their homework and chores, clearly having their affairs in order. Consistently finishing what they started, your friend's gentle persistence will undoubtedly get them far in life, wherever they choose to go.

The most conspicuous quality of the phlegmatic is their slow manner of thinking and acting, and their low affect. This makes it easy to overlook their calm, steady productivity. Compared to a 'neutral' temperament, they are chiefly distant and down-to-earth, calm and composed. They are not driven by pleasure, either physical or mental. Rather, they have control over their desires and

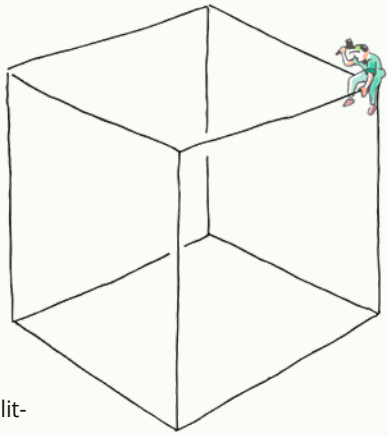
do not let themselves get carried away by ideals or ideations. Easily springing into action, their strong secondary function protects them against distractions or detours and facilitates the formation of creditable work habits. Due to this steady success, they accomplish their goals without trouble, then smoothly transition to working on the next one.

Out of all the types, phlegmatics are the most patient, persistent, regularly active, and thoughtful, and the least impulsive. They usually finish what they start, and are resolute when making decisions. They have a steady mood and are often described as cold and businesslike, good-tempered, and tolerant. Whether their powers are used for good or bad depends on their character and dominant motives. We can just as well imagine the cold industrialist, the meticulous collector, or the strategizing politician. They are often strongly principled, and their motives are likely based on reasoning and conceptualizations, rather than feelings.

This leads to a special situation regarding their intellect, in which interesting forces work against each other. On the one hand, their strong secondary function, devoid of emotional biases, promotes a consistent ability to observe, consider, and reflect on all angles of an issue. On the other hand, their lack of emotional engagement impairs the imagination and concentration. As a result, this type are often judged to be contemplative and independent thinkers, who have a good judgment of character and a refined perception. They have a well-organized memory, and tend to read a lot. In their thoughts and actions, they are systematic and demonstrate considerable methodological rigor. While they excel in these areas, other intellectual qualities, such as cleverness, are less well-developed. By extension, they are poor at telling anecdotes or theatrical performance, and are rarely praised for their sense of humour.

In many ways, they represent the extreme opposite to the nervous type **(E+A-P)**. For example, this type are unsurpassed in financial prudence, punctuality, trustworthiness, and reliability. Their words and actions are in perfect harmony. Again as opposed to the nervous type, they have minimal interest in the pursuit of pleasures such as food, drink, romance, awards, or travel. Whereas the nervous type moves from place to place, the phlegmatics need considerable motivation, or some amount of pressure, to leave the comforts of home. Here, the three basic dimensions appear to bring out these characteristics to their extremes.

## The sanguine type (E-A+P)



Some people seem to be always busy. You have such a friend, who often invites you out on some activity, like hiking or climbing. Every time, you wonder what plan they will propose next. It is nice to have such a lively person in your life, on whom you can depend to take the initiative, although it is sometimes hard to keep up. In some areas, however, you find yourself having an advantage, mostly on artistic, philosophical, or literary topics. You further notice that, while they seem very insightful on a surface level, there is little real depth to their insight. When you ask too many follow-up questions, or wish to engage in deeper or more abstract conversation, you are sometimes taken aback by the observation that your friend appears a bit annoyed. Although subtle, it stands out against their usual composure. It seems they dislike it when you go too deeply into a topic and feel more comfortable when conversations remain on a more superficial and practical level.

Because the practical level is where they shine. You are often impressed with their ability to tackle whatever needs to be done. While you often have to overcome some reluctance to do chores or boring tasks, your friend appears to face no such resistance. They just get going, whether those tasks are challenging or mundane, essential or pointless. When an unexpected problem or complication falls in their way, they are not set back. Rather, they appear to welcome the novelty of the situation and navigate it with striking clarity and ease.

The most obvious quality of the sanguine type is their activity. But rather than a coherent, calculated approach, their activity tends to be fragmented and changeable due to their predominant primary function. They can nonetheless reveal a great deal of persistence, and are steady workers who finish what they start. Similarly, they are exceptionally resolute in their actions and have a very practical mindset. However, rather than their thoughts and actions being

informed by theories, distant consequences, or extensive background knowledge, they can fully concentrate in the moment on the problem at hand. In other words, they excel in their presence of mind (*tegenwoordigheid van geest*), in a way that phlegmatics **(E-A+S)** cannot match.

For similar reasons, this type far exceeds the phlegmatics (although remaining below average) in impulsivity and in the tendency to neglect necessary tasks. While phlegmatics can easily maintain a static position for longer periods of time, the sanguine types find it harder to sit still and refrain from moving around or fidgeting. They thrive in highly stimulating working conditions with a lot of variety. This makes them well suited to political work, especially campaigning. Additionally, in times of confusion or conflict, they have a keen ability to deal with new challenges, easily navigating danger as well as opportunity. Especially in times of crisis, sometimes the fact *that* action is undertaken is more important than *which* action is chosen. In such circumstances, the sanguine type is especially well equipped to step up, keep a cool head, and take in all the information necessary to form an accurate assessment of the problem. Without the burden of restrictions and customs that normal times dictate, they will not hesitate to make the difficult decisions.

For this type, their low emotionality is less directly apparent than their high activity. Unchecked by the secondary function, the emotions that arise in the moment are more outwardly apparent. For this reason, sanguines are more often than phlegmatics (but again less than average) seen as intense and irritable. Yet, they are still ultimately described as composed and cool-natured. Out of all the types, they are the most upbeat and cheerful, and the least melancholic. Their basic temperamental qualities work together to achieve a complete dedication to the current moment, free from the aftereffects of strong emotions or other thought processes. They are able to fully appreciate the here-and-now, and to enjoy both their current tasks as well as planning future activities. They tend to be optimistically confident that these plans will succeed, and find it easy to overlook any hurdles that might arise along the way.

In terms of intellect, they contrast with the phlegmatics in much the same ways that they do in terms of action: more lively, but less stable and grounded. They are interested in many things, read more than average, and can recollect what they read in an orderly manner. However, their interests have more breadth than depth, and they lose interest quickly once their curiosity has been

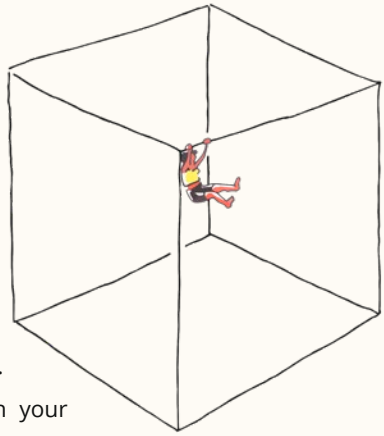
satisfied. Their superior perception allows them to take in new information easily, but having done so, they have difficulty considering the issue from all angles and reaching a well-founded conclusion. This means that, in school and life, they learn and understand easily, but do not integrate these skills or knowledge into a wider system to make it their own. Together with the nervous type **(E+A-P)**, they are deemed very funny and clever, and possess a lively imagination that is more playful than deep. They are the best at improvising a speech and are fairly good at artistic hobbies.

Their predilection for pleasures such as food and drink is around average, but certainly greater than the phlegmatics' **(E-A+S)**. At the same time, they are less prone to altruistic tendencies such as helpfulness, trustworthiness, and financial prudence. Their promises hold less weight because a promise made is quickly forgotten. And while they can experience intense remorse at the moment they realize their mistake, this unpleasant feeling is also easily washed away. Therefore, this type is generally quite content with life in general, as well as with themselves.

## 2.3 The emotional, active types

When high emotionality and high activity are combined, we are confronted with a different kind of motivation. In the first place, the attention is directed outwards, so that emotions are not brooded over, but discharged immediately in plans of action. Constantly interacting with the world, these types — the *choleric* and *passionate* — have a close connection with their environment and a clear notion of which goals are realistic to achieve. The influence exerted by their activity and emotionality primarily occupies their minds with concrete plans of action. Unlike the emotional types discussed earlier, these types regard challenging conditions as less of a threat and more of a challenge.

## The choleric type (E+A+P)



In the distance you hear some loud laughter, and you would recognize this sound anywhere. Your friend is very generous with their expressions of joy, and in general they might be one of the most upbeat and happy people you have ever met. Sure, you have also seen them upset or angry, but never for long periods of time. Their mood tends to be one of childlike optimism. Now that you think about it, although your friend is of course mature in many ways, you suspect that they will always retain at least a little bit of this youthful spirit. You can recognize it in many things, in their little mannerisms and the ways they conduct themselves when working. Always busy and moving around, acting rather impulsively, it can be hard to keep your friend still to focus on some serious or abstract topic of conversation. If something needs to be taken care of, you know you can count on your friend to get it done; but if the task requires careful and deliberate planning beforehand, you might consider asking someone else. You suspect that they would already be hammering in a nail before you even had the chance to tell them where you would like to hang the painting.

Luckily, they are handy and practical, because telling them what to do or how to do it is generally not well received. Resistance is to be expected if someone, especially an authority figure, tries to direct them — even toward a goal they had already resolved on. You sometimes have to chuckle, because they have no such reservations about telling you how to conduct your business. In many small ways, they make their need for independence very clear. Nevertheless, you know them as a loyal friend who cares for their family and loves animals, children, and nature.

The cholerics share the predominance of the primary function with the nervous **(E+A-P)** and sanguine **(E-A+P)** types. However, in the choleric it is expressed differently. The irritability and sensibility of the nervous type now reach a more intense level of ferocity and impatience. Due to their high emotionality compared to the sanguine type, they pursue their goals with a more serious energy. They have difficulty sitting still, and even in their free time they tend to keep very busy. In their actions, they are rather impulsive, but also resolute and daring. Weighing the pros and cons of a particular situation is not one of their strengths. Their intense concentration is based more in feelings than facts, leading to quick and intuitive decisions. But due to their practical nature, these intuitive decisions often turn out to be the right ones. They are not short of perseverance, and can pursue long-term goals better than any of the other primary-functioning types. This is because attainment of goals is often experienced as highly rewarding in its own right.

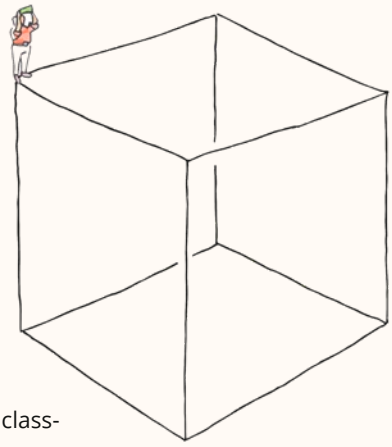
The emotions that this type experiences are powerful, intense, and variable. Within a short time, their feelings can fluctuate between intense joy and deep sadness. But cholerics are also highly resilient, which makes them unlikely to lose themselves completely in moments of misery. Therefore, their mood is generally one of cheerfulness and optimism. The feelings themselves almost seem to take on an active and goal-oriented nature. This is especially apparent in this type's behaviour toward others. The choleric can react explosively when they feel others are hampering their activities; outright indignation is more probable than disappointment when they feel they are receiving insufficient cooperation. Another example is that, when a friend is having a difficult time, a choleric is more inclined to adopt an active problem-solving approach rather than to sit down next to them and sympathize. Their way of showing affection and support is less likely to be through small attentive gestures, and more likely to involve grand gifts and surprises.

In the area of intellect, their activity and interest largely compensates for their lack of secondary function. Due to their ability to live in the moment, they are great observers and are highly alert. They shine in practical skills but have a resistance to abstractions and reflection. When making inquiries about a certain topic, for example, they are prone to ask for verbal advice rather than for books to study. This type is clever and funny in conversation. However, they are rarely credited with the slower kind of intelligence, which we might

call 'sensible' or 'wise'. Although they have a rational and practical outlook, they tend to base their judgment on a limited amount of information that is strongly coloured by their pre-existing convictions. Therefore, they are seen as poor judges of character.

When observing their general motives, their powerful need for independence and freedom becomes apparent. More than others, they are likely to be obstinate and recalcitrant in the face of authority, and unlikely to submit to it meekly. Despite this hunger for autonomy, they tend not to offer the same freedom to others. Instead, they can be very meddlesome and eager to exert their influence. This, however, is easily explained by their high activity and emotionality. As soon as they believe someone is doing something the 'wrong' way, they cannot help but become agitated and feel forced to intervene. In the end, it comes from a place of passionate helpfulness, even if that is not always apparent. Their approach is informal and direct, with a preference for new and unique experiences over the mundane.

## The passionate type (E+A+S)



You know many people who go through life without a clear purpose in mind, but sometimes you meet someone who seems to have dedicated their entire life to a singular goal. This one friend has always known exactly what they wanted, and planned their life accordingly. Whenever you hang out, you hear more about their plans for the future and they update you regularly about their progress. When few of your classmates have decided what career or course of studies they wish to pursue, it seems almost as if your friend knew before they were even born. On the one hand, you are a bit jealous — if only you had the same confidence about the future —, but on the other hand, you can see the drawbacks of this single-minded approach to life.

First of all, you discern a certain level of inflexibility. Their views are always the right views; your friend is not always able to accept new or different perspectives. This often makes them come across as overly confident, even self-righteous, in their beliefs. It tinges their interactions with others with a certain intensity and severity that not everyone can appreciate. When they encounter resistance or are confronted with others' inaction or indecisiveness, they hide their annoyance poorly. You can see that this makes some people uncomfortable, even eager to maintain a safe distance. But having known your friend for a long time, you have grown to understand and appreciate their peculiarities. You can also see that their determined nature has got them far in life, and you do not doubt that they will achieve their goals and make a significant impact on the world.

To arrive at the passionate type, we could either depart from the choleric **(E+A+P)** and add more *unity*, or depart from the phlegmatic **(E-A+S)** and add more *intensity*. We find a type that is fully governed by their passions: strong, durable, and specific desires, which override or at least colour all other mental contents. This type seems to live their lives in complete dedication to a single goal, and are hardly able to see beyond it. Anything that does not directly relate to this one central passion is easily disregarded. In other words, their mental contents only gain weight to the extent that they resonate with their emotional life. But more than that, this type appears to develop strong and long-term tendencies or 'habits' towards the goals themselves. Even if the emotional and motivational weight associated with that goal has faded over time, they will continue to pursue it. Here, we can see that the durable effect of the goal itself, rather than its emotional value, is what sustains their motivation in the long term.

It follows that this type is characterized by this energetic and single-minded pursuit of their goals, as well as by their slowly developing and changing, but very durable, emotions. The strength of these emotions is not always noticeable, because they are expressed through their actions rather than direct emotional displays. But such displays can sometimes occur, often with explosive force, especially when they are confronted by others acting in an unintelligent, weak, or resistant manner. Therefore, this type is deemed to be intense and highly impatient, and is prone to using superlatives. In addition, the obstinate pursuit of their goals can cause a reduced empathy and increased hostility towards others, which in turn can have an isolating effect. This is why, together with the sentimentals **(E+A-S)**, this type is often marked by childhood isolation.

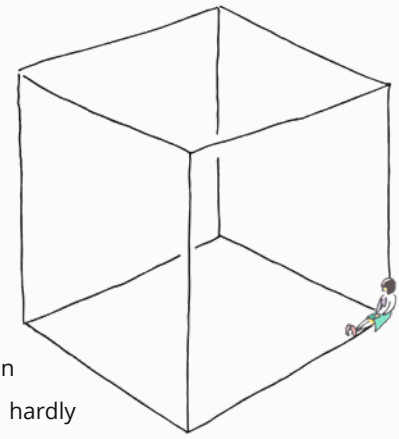
This contributes to the passionate type being judged as closed off, distrustful, difficult to reconcile with, and inclined toward negative moods. In their work, they display substantial perseverance and independence. Their thinking gets very in-depth rather than remaining on the surface. Nothing stands in their way, and if it does, it will be trampled with overwhelming force. However, those who manage to penetrate their inner circle find this type to exhibit great compassion, support, and family spirit. The passionate types are reliable, honest, and conscientious workers and friends. On the other hand, they appear indifferent to the smaller pleasures in life such as food, drink, sports, music,

and nature. They are often evaluated as good observers, mainly because of their systematic and methodical approach. However, the one-sided focus of the secondary function makes them less receptive to fresh information and new perspectives. While their memory can be prodigious, it is strongly selective and leaves large gaps in their knowledge. That makes them poor judges of people and situations. Unlike the cholerics **(E+A+P)**, they love to read books and engage in introspection, and have fewer problems with abstraction and reflection.

## 2.4 The non-emotional, non-active types

The last two types, *amorphous* and *apathetic*, are characterized by their minimal emotionality and activity — qualities that reinforce each other. While certain actions might otherwise have been supported by strong motivations and emotions, the lack of emotional intensity means that any plan has a limited chance of coming to fruition. And the reverse is also true, as the slow and passive manner of these types has a dampening effect on their emotional life. Because of these mutually reinforcing sources of passiveness, functions like attention, concentration, and imagination are impaired.

## The amorphous type (E-A-P)



There is one friend whom you feel comfortable bringing along wherever you go. You could take them to tea with your grandmother, and they would blend in just as well as if you were to take them partying with your boisterous friends. They just seem to fit right in, to be content and composed — the very model of agreeability. Now that you think about it, you have never seen them in conflict with anyone. You can hardly even imagine what it would take to get on their bad side. Sometimes, you silently wonder if you could ever approach their level of inner peace in your lifetime.

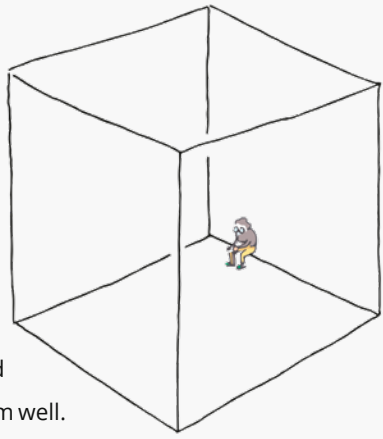
But at other times, you are a bit worried for your friend. They are as impressionable as they are agreeable. Sometimes you see them in bad company, and then you hope that they do not get caught up in any unsavoury activities. Indulgence in food, drink, and games has always easily seduced your friend, and recently you have noticed that they might be developing a gambling habit. More and more, you catch them pressing colourful buttons on what looks like an online slot machine. Although your friend would never mention it to you, you fear that they are taking on debts to fuel their new hobby. Luckily, though, when you bring up your worries, they seem to understand and appreciate your concern. They promise to be more careful in the future and to try to wind down their gambling. At such times, you are glad and relieved that they never get defensive, and always seem open and honest about sensitive topics.

The amorphous type lacks a strong secondary function. Therefore, their defining trait is that they are malleable to the highest degree, and can easily change their beliefs and behaviours. It is unlikely that they will ever harbour long-term goals or convictions. Rather, this type bends whichever way the wind is blowing, making them very easy-going. In a social setting, they tend to be silent and withdrawn. However, they do have a special talent for theatrical performance.

To discuss their intellect, it is interesting to compare them with the nervous type **(E+A-P)**, which only differs in terms of their emotionality. Both show a similar intellectual deficiency; both are seen as superficial and as bad judges of character, with poor perception and memory. However, in all these intellectual traits, while the amorphous type ranks lower than average, they score decidedly higher than the nervous type. This can be explained by a lack of emotionality, and therefore a lack of preoccupation or prejudice. Strong emotions are absent and therefore do not narrow the consciousness as much. On the other hand, they share an aversion for philosophical musings, for which they have the absolute minimum of appreciation. The nervous and amorphous types also share a liking for bodily pleasures such as food and drink. The amorphous type is especially drawn towards a wasteful, hedonistic lifestyle, which can easily lead to debt.

But some aspects of the amorphous type are exact opposite of the nervous type. Rather than periods of intermittent activity, the amorphous type is consistently inactive. At the same time, they are generally identified as calm, cool, and steady in mood, even inclined to be upbeat. Amorphics are highly tolerant, and in some cases even outright incapable of getting angry — continuing their general theme of indifference. For the same reason, they are less likely to engage in philanthropic work, generosity, or patriotism. On the other hand, this also means that they do not seek praise or recognition, nor are they inclined to meddle in other people's affairs. Ultimately, this all contributes to this type being the most agreeable and easy-going kind of person.

## The apathetic type (E-A-S)



Some friends make you wonder if they will ever grow up. And then you have this one friend who has always conveyed a sense of maturity, despite being the same age as you. They are always ready with advice, and are overall a sensible kind of person — a good judge of character, prudent, and knowledgeable. Rarely do they speak up in public. Rather, they are silent and closed off to those who do not know them well. Sometimes you wonder if your classmates are aware that your friend is actually in their class. But over time you two have grown close, and you are very glad that you met this friend on whom you can always rely. They are seemingly never distressed or undergoing a crisis: whenever you ask how they are doing, it is just 'business as usual'. More than once, you have benefitted from their steady presence, their encyclopaedic knowledge, and the life lessons they can impart.

Their steady nature also means that you always know what to expect — so much so, that you sometimes wonder if you are listening to a broken record. You like seeking their advice because of their sensible and wise nature, but after your long history together, you can predict quite easily what they are going to say. And despite all the advice they have given you, you notice that they tend to be indecisive in their own life. Compared to your other friends who have a more upbeat and can-do attitude, you would almost describe them as indifferent or despondent. You reason to yourself that surely more must be going on inside than is visible from the outside.

This type is distinguished from the amorphous **(E-A-P)** only through the strength of their secondary function, making them much more resistant to outside influences. However, in this case the secondary function does not lead to a finely tuned inner world as with the sentimentals **(E+A-S)**, or a well-founded set of insights as with the phlegmatics **(E-A+S)**. On the contrary, few rich emotions or organized sets of facts captivate their mental world. Instead, it is filled with recollections of what was said and done previously, which largely determine what will be said or done in the future. Therefore, their mental world is defined by routine.

As a result, they are very principled and consistent people. Their intellectual skills are more reproductive than truly productive. Original ideas and thoughts are unlikely to arise due to a general lack of interest and imagination. In many ways, they possess a rigidity so fundamental that it becomes especially hard for this type to adopt new and fresh perspectives. Therefore, their habits are increasingly likely remain habits, and with time this type grows fixed in their way of acting.

As with the nervous–amorphous comparison, it is interesting to compare this type with the sentimentals **(E+A-S)**, who differ only in their level of emotionality. Sharing the other two dimensions, they also share a lack of decisiveness and tolerance. Additionally, they are both inclined towards pessimism and melancholy, and the appearance of absent-mindedness. Both are judged as prudent, reliable people, who do not laugh much and are closed off from the world around them. In other characteristics, however, the apathetic type is the opposite of the sentimental type due to their different levels of emotionality. With little sign of sensitivity or fierceness, they have a steady mood and are seen as wise and good judges of character. The apathetic type is perhaps the most silent and shows little sign of any deeper philosophical reflection, being indifferent towards matters of politics and religion.

## Conclusion

Reducing the endless variations in personality to just three dimensions has a certain charm because it can make life more manageable. It brings order to the chaos and can provide a valuable tool to grapple with the infinite complexity of the individuals we encounter in everyday life. However, such a great benefit often has an equally great downside. In this case, the simplification is

accompanied by the risk of losing sight of the full richness and diversity of reality, which no system can hope to capture. In other words, these theories help us understand certain things, while making us blind to others. It is therefore essential to continually acknowledge this richness and complexity when engaging with any system, theory, or categorization.

One way in which these types reduce complexity is through definitions based on the *extremes* of the dimensions. This allows for a clearer differentiation and makes the types more recognizable. However, it is very rare to find examples of these extremes in reality. The overwhelming majority of people are located somewhere in the middle of each dimension, and would thus take a position somewhere within the cube, rather than near any of its edges or corners. For that reason, readers will probably find that they recognize more than one type in themselves or others.

Another concern is that the types as presented in this chapter may promote the notion that personality is fixed; instead, we should emphasize that the personality is always developing. As we learn and experience new things, we also constantly modify the ways in which we approach the challenges we encounter (although some might do this more readily than others). In the longer term, we might take active steps to reflect on, and even change, our fundamental approach to engaging with the world. Such reflection can produce slow but durable shifts in our temperament. Even in the short term, a single personality can vary greatly and circumstances can have a large impact. We might become more confident and active when emboldened by achievement or excitement, whereas exhaustion or illness can make us more passive and emotionally unstable. Finally, we can play an active role in deciding which side of ourselves we bring to the fore in certain situations. It is common, for example, to project a slightly different version of ourselves in the company of family than we do with our friends, or than we do in school or at work.

To conclude, what these types really mean is a very personal question. Everyone will have their own interpretation, and that is precisely the point: everyone engages in a different way with these kinds of theories and this *engagement* is what really matters in the end. How Heymans himself viewed these questions — how he intended and developed this typology — is the topic of the final chapter.

CHAPTER THREE:

# Origin, methods, and impact

The theory and types discussed in this book are the products of a different time, and were researched by someone whose ideas, vision, and approach also reflected that era. In this final chapter, we want to provide the historical background to Gerard Heymans' work and methods, and to comment on their importance over time.[4]

## 3.1 A brief overview of Heymans' life

To start this overview, it helps to set the stage by looking at what Heymans himself deemed important to know about his life. When he was asked to write an autobiography towards the end of his career, Heymans wrote forty pages on his philosophical views. At the very end, he included a mere four lines of biographic information. He was born in the Frisian village of Ferwerd in 1857 and went to high school in Leeuwarden, before studying law in Leiden and philosophy in Freiburg. He drew inspiration for his academic work primarily from Kant, Fechner, and a few more British authors. In his supposed 'autobiography', this is the sum total of the personal information that Heymans decided to disclose.

Heymans' private nature was also emphasized by Henri J. F. W. Brugmans (1884–1961) in the eulogy he gave for his mentor. Brugmans opened his speech by voicing some discomfort, because he was not sure that Heymans would have approved of the ceremony. It was in Heymans' nature to avoid any kind

4 This chapter is almost completely based on a selection of secondary literature. See:
Brugmans, H. J. F. W. (1930). Heymans als psycholoog. *Mens en Maatschappij, 6*(3), 217–229.
van Strien, P. J. (1992). Het visioen van Heymans en de werkelijkheid daarna. *De Psycholoog, 27*(10), 418–420.
van Strien, P. J., & Feij, J. (1992). Heymans over temperament en karakter. In D. Draaisma (Ed.), *Een laboratorium voor de ziel. Gerard Heymans en het begin van de experimentele psychologie* (pp. 66–79). Historische Uitgeverij | Universiteitsmuseum.

of personal tributes or celebrations. On his seventieth birthday, he even declined an official portrait, which was customary for all professors at the Rijksuniversiteit Groningen (RUG). In the end they still made one, but only posthumously in 2009. Heymans did allow for a bronze bust to be made in his likeness, but only because he wanted to support the career of the young artist. For anyone outside his most inner circle, Heymans was personally closed off. He only wanted to be known for his work.

These small anecdotes already tell us a great deal about the kind of person that Heymans was. We can imagine a stereotypical university professor: private, modest, academically oriented. Even his outward appearance, complete with goatee, glasses, and a rather slight build, was fully in line with this image. While Heymans himself was a private man, writings from his contemporaries and historians of psychology allow us to piece together some important details about his life in order to understand his career and the origins of his differential psychology.

## Professor of Philosophy

Heymans obtained his first PhD in state sciences in Leiden (1880) and another one in philosophy in Freiburg, Germany (1881). After returning to Leiden he married Anthonia Barkey and lectured for a few years, before accepting the chair in philosophy at the RUG in 1890. Despite receiving many prestigious offers from other universities, he would keep this professorship for the rest of his career. Heymans dedicated his inaugural speech to sketching the vision for his future work. Beyond the customary method in philosophy — of *thinking* and *talking* about plausible hypotheses on knowledge — Heymans wanted to put these hypotheses to the *empirical test*. With this experimental approach, he aimed at the ambitious goal of categorizing and understanding the elements that made up the conscious experience. His speech, 'The Experiment in Philosophy', reflected this pioneering outlook.

In 1892, Heymans took a major step towards this goal by securing a small amount of funding to acquire the experimental equipment needed to undertake his experiments. At first, the instruments were kept in his home. With this first collection of instruments, Heymans introduced experimental psychology to the Netherlands. His main experimental subject was his wife, who participated as his highly esteemed research subject in 11,008 experimental trials.

That number is based on the calculations of Douwe Draaisma, who concludes that Anthonia must have loved her husband very much.[5] The experiments took up most of her morning hours, after which her afternoons were dedicated to artistic pursuits in their garden pavilion. The Heymans Villa, in which this laboratory was located in the early years, was designed by renowned architect and personal friend Hendrikus Petrus Berlage (1856–1934) in complete accordance with Heymans' wishes. It can still be viewed across the water from the Groningen train station.

## Psychological laws

In his laboratory, Heymans primarily concerned himself with his efforts to establish general laws of psychology. His secondary education had endowed him with a special appreciation for the natural sciences. He might have pursued a career in that field if one of his teachers had not discouraged him, declaring that 'all the important discoveries had already been made' in the field of physics. Heymans' academic career took a different path, but his research methods still bore the traces of the natural-scientific approach. Inspired by natural laws that could explain phenomena such as gravity, he

5 Draaisma, D., Lalbahadoersing, B., & Haas, E. (1992). Een laboratorium voor de ziel. Heymans' Laboratorium voor de Experimentele Psychologie 1892-1927. In D. Draaisma (Ed.), *Een laboratorium voor de ziel. Gerard Heymans en het begin van de experimentele psychologie* (p. 17). Historische Uitgeverij | Universiteitsmuseum.

even came up with his own psychological law, known as Heymans' law. It was inspired by Weber's law on 'just noticeable differences' and concerned the impression of stimuli on the senses, specifically their inhibiting effects.[6]

## Ethics and metaphysics

In his philosophy, Heymans covered all the traditional disciplines of logic, ethics, and aesthetics. He developed an 'ethics of objectivity', in which he emphasized the importance of gathering all relevant information in order to make well-informed decisions. But the most impactful and original work he did in philosophy was in the field of metaphysics, formulating his theory of psychic monism. The dominant view at the time was materialism, which held that the only reality is the *material* reality. Inspired by the Dutch philosopher Benedictus de Spinoza (1632–1677), Heymans turned this theory on its head by promoting the idea that the material qualities such as shape, colour, and smell were only reflections of a more fundamental reality beneath the material one. According to Heymans, this underlying level was psychological: everything is one, and everything is consciousness.[7] This idea intrigued many people at the time, and later scholars have hailed him as 'the second most influential philosopher of the Netherlands after Spinoza.'[8]

## Rector Magnificus

After a few years of climbing up the ladder of governance at the Rijksuniversiteit Groningen, in 1908 Heymans reached the highest rung and became Rector Magnificus of the university. His appointment came at a critical time, as the main university building had been destroyed by fire in 1906 and had to be rebuilt from the ground up. As a member of the University Board, Heymans had a measure of influence on the plans for the new building. He seized the opportunity to move his laboratory to the university building, ensuring its design met all his needs. For example, it was possible to completely isolate the

6 For more on Heymans' law, see Dekker, K. (2011). *Gerard Heymans Herlezen - Bewustzijn en Methodologie*. Groningen, Rijksuniversiteit.

7 For a more elaborate discussion, see van Strien, P. J. (2018). Gerard Heymans. In V. Busato, M. van Essen, & W. Koops (Eds.), *Vier grondleggers van de psychologie* (pp. 52–58). Prometheus. Other interesting areas of research can be found in this chapter as well, such as that on visual illusions (pp. 50–51), while telepathy is discussed in van Strien, P. J. (1993). *Nederlandse psychologen en hun publiek. Een contextuele geschiedenis*. Van Gorcum.

8 ten Have, T. T. (1947). *Essentials of Heymans' philosophy*. Synthese. (p. 526)

room from all external sound and light, allowing for even more precise measurements. Heymans also managed to include a bigger lecture hall to accommodate his growing audience.

When his term as Rector Magnificus ended in 1909, Heymans gave a speech that would go on to become rather famous. Customarily, these speeches were not repeated beyond the university walls, but his was published and even translated in to German, French and Italian. The title was 'The Future Age of Psychology', and it sketched a vision of how the discipline of psychology could be of service to society once it had gained a more solid scientific foundation. Heymans observed that the natural sciences had enabled a multitude of new technologies that made life easier, such as electricity and the steam engine. However, people had not really become happier as a result. He reasoned that technological developments needed to be accompanied by advances in psychological insight to fully reap their benefits. Heymans explained how this might work:

> The development of psychology will *steer social as well as individual life:* one will know where one can go, where one wants to go, and how to get there. That may sound very simple and ordinary; but it means eliminating a great deal of fruitless anxiety and suffering. For individuals, it means peace within themselves; for social interaction, it means authenticity and truth; for business, it means the right man in the right place everywhere; and for society, it means reconstruction based on solid foundations. Would our society not take on an entirely different appearance, once these things are brought within our reach?[9]

As Heymans saw it, the contemporary state of psychology was still far removed from his vision of a mature science that could help materialize this improvement of general happiness and fulfilment. Nevertheless, it must have served as a great inspiration in the development of his typology.

9 Heymans, G. (1909). De toekomstige eeuw der psychologie (printed speech). J.B. Wolters. Retrieved from: https://www.delpher.nl/nl/boeken/view?coll=boeken&identifier=MMCMC01:000001401:00001

## 3.2 Developing the typology

It is worth noting that his *Introduction to Special Psychology* (1929) is one of the last works he completed before his death in 1930. That means that out of all of his publications, this book can be said to offer the most 'complete' or 'final' perspective into Heymans ideas. However, the date of 1929 is only that of final publication and does not reveal the decades of work that preceded it. In reality, the book also represents all the time that Heymans spent collecting data, conducting analysis, and giving lectures. Therefore, it is worthwhile to go over all the steps that ended up contributing to the final work.

### Capturing variations into basic factors

In his early research, Heymans had pursued his interest of finding broad and generalizable laws of human psychology. Around the turn of the twentieth century, he became interested in the separate but related question of how to systematically categorize all the variation in human personalities. Just as he had sought laws and formulas to express *similarities*, why not look for mathematical formulas to express the *difference*s as well?

Heymans figured that it might be possible to simplify the seemingly endless variation in personality by finding basic factors that could explain most of the differences. When he started this line of research, a lot of work already had been done on the topic of what would later become known as 'differential psychology'. Specifically, there were two schools of research that came together within Heymans' study.

#### The French school: Biographical research

The first line of research originated in France, and was based in a combination of science and literary studies. It was known as the 'biographical method', because it studied the topic of personality using a broad range of biographies of famous individuals. Heymans devoured all the typological literature that had been produced in this tradition and used it as an important inspiration for his own investigations.

He adopted many of their approaches and terms, but also had some reservations about this method. These studies were very effective at finding historical examples to base general observations on, and could be extensively supported by rich descriptions. However, the biographical material was used only

for anecdotes and illustration, and rarely to back up any fundamental claims about personality differences. While many of these studies yielded typologies that *appeared* plausible, it was still necessary to substantiate these claims with empirical evidence.

### The German school: The natural scientific method

What made Heymans unique was that he was not content to remain in the hypothetical realm, but rather insisted on putting the prevalent beliefs about personality to the empirical test. Many of these beliefs had been around for a long time, with certain fundamental theories originating in ancient Greece. Temperamental thinking has its roots in the doctrine of 'humours', or four basic bodily fluids, identified by Hippocrates: blood, yellow bile, black bile, and phlegm. In ancient and medieval medicine, health was understood to be founded on these fluids and their relative proportions in the body. (*Temperamentum* is Latin for 'the right mixture'.) These teachings of the four humours were linked with personality types, and became a popular and enduring way to discuss temperamental differences.

Over time, these physiological interpretations of personality gave way to a more psychological discussion based on notions of polarities. Wilhelm Wundt (1832–1920), pioneer of laboratory methods and the natural-scientific approach to psychological research, built on the ancient system by discussing the perseveration of emotions (a concept similar to the aftereffects discussed in Chapter One). The four ancient temperaments linked to the four humours — phlegmatic (phlegm), sanguine (blood), choleric (yellow bile), and melancholic (black bile) — were now positioned along two axes according to the duration and intensity of emotions. The perseveration aspect was further elaborated upon by Otto Gross (1877–1920), a psychiatrist who provided a neurophysiological explanation for it, and referred to it as the 'secondary function'. These were the origins for two of the three dimensions that Heymans deemed a good provisional foundation to represent the 'basic factors' he sought. The third dimension, activity, was developed from Kant's own conception of activity ('*tätigkeit*').

## Heymans' typographic study

These French and German lines of research came together in Heymans' own study. The first step was a large-scale biography study inspired by the French tradition. Together with a few colleagues, Heymans studied over a hundred biographies of historical figures and took notes on the most striking aspects of their personalities. He then made cards listing eighty to ninety commonly mentioned characteristics, and assigned a plus (+) or minus (–) sign to each item. No sign was noted if the text didn't offer sufficient evidence to judge a trait. Using rudimentary calculations of probability and correlation, he looked for patterns of traits that were less or more prevalent within certain groups. These calculations were precursors for the factor analysis that later became commonplace in psychology.

This was the basis upon which the study was built. In order to verify this wealth of information, another of Heymans' data-collection efforts would come in handy. In 1905, together with his colleague Enno Dirk Wiersma (1858–1940), he had undertaken a heredity survey (*heriditeitsenquête*) that was unusually broad for the time, with the original purpose of studying the extent to which personality characteristics were hereditary. Heymans and Wiersema sent out a list of ninety traits to approximately 3,000 general practitioners in the Netherlands, asking them to assess a few families that they knew well. In the end, the researchers received 2,523 lists from 458 doctors, and started to work on the calculations.

Heymans and Wiersma published their first results in 1906, and continued to publish regularly on this collection of data until they were finished in 1918, in the journal *Philosophische Studiën* that was founded and run by Wundt. The publications span such a large period of time because all the calculations needed to be done by hand; a dizzying array of tables, correlations, and graphs must have been produced for each publication. Historian and subsequent occupant of the Heymans chair, Pieter van Strien (1928–2022), has recounted that Heymans received aid from his good friend, the famous astronomer Jacobus Cornelius Kapteyn (1851–1922). Kapteyn also dealt with large-scale calculations in his research, for which he had a small army of students at his disposal. The story goes that these students also lent a hand to speed up Heymans' numerous calculations.

As labour intensive as this must have been, Heymans regarded the results from the hereditary survey not as foundational, but only as 'supplementary', in 'verifying' what he had found in the biographical study. With both sets of data, his confidence in his three initially hypothetical basic dimensions grew. By 1909, he felt that these general factors had been sufficiently corroborated, and references to the eight types began to appear in his lectures and publications. In addition to empirical confirmation, the survey data also yielded a few new insight into two types that had not been represented in the biographical data, the amorphous and apathetic types. Heymans reasoned that they had been omitted by virtue of their temperament, they never achieved anything significant enough to warrant biographical discussion.

## The lectures on special psychology

The biographical descriptions were also a cornerstone of the famous lectures that Heymans gave on the topic starting in the academic year 1903–1904. When discussing the types in these lectures, much like the layout of his chapter in the original book, he would always start by listing these well-known personalities, invoking a strong sense of familiarity in his audience. His student Brugmans recounts how these lectures were instrumental in disseminating his typology to a broader audience. In that lecture series, which ran throughout the 1910s and 1920s, many generations of students enjoyed this material centred on human nature and all its variations and peculiarities. For that reason, the lectures became very popular among students and professors from all the university's faculties.

In addition to the fact that the topic itself was broadly attractive, Brugmans points to another aspect of these lectures that made them especially well-appreciated by the audience. Students were regularly invited to fully surrender themselves to a mental exercise that Heymans called 'the imagination experiment' (*het fantasie-experiment*). In this exercise, students were asked to imagine a certain scene based on their own memory and emotions experienced in the past, in combination with factual descriptions of the situation. This could, for example, be a scenario in which someone had committed a crime. Taking into account all the motives and temperamental qualities of the suspect, the students had to truly get in the shoes of the perpetrator and understand their actions from this perspective. They would consider how certain temperamen-

tal dispositions might lead to impulsive actions that the perpetrator would later regret. In many of these cases, the nervous temperament was one that could easily get into trouble, while the phlegmatic rarely would. There was clearly a certain 'moral' aspect to the typology, tying in with Heymans' philosophical studies on the topic of ethics.

## Utility

This is where the intended utility of the theory came in. Despite Heymans' focus on empirical verification, he was adamant that this theory was not supposed to be understood as 'true' or 'naturally determined'. A judgement can be deemed true or false. In contrast, classifications only classify. There is no point in asking whether a classification is *correct*; the only question is whether it is *useful*.

Somewhat ironically, the most important purpose of understanding the types, including their characteristics and underlying mechanisms, was to be able to make better judgements. Psychological insight was not only necessary for making better moral decisions, but also to *understand* why others would act the ways they did. Because we should judge not the *action itself*, but the *person* who acts and the *motives* involved in their action. In order to do so, it is necessary to take into account a person's character, temperament, and living conditions. The imagination experiment was one way in which Heymans trained his audience's 'ethical muscle'.

For example, someone with high emotionality and a limited secondary function could suffer from a severely narrowed consciousness. They would be so completely preoccupied with one dominant motive, such as sexual arousal or greed, that nothing else could penetrate their central consciousness. If the emotional weight of the motive was not so all-encompassing that it drove out all other motives, or if more reasonable calculations of costs and benefits had influenced the decision-making process through a stronger secondary function, then the perpetrator would have refrained from the act before it was too late. That reasoning might lead us to regard temperament as a mitigating factor when judging someone's actions.

These types of psychological insights were also meant to help individuals in navigating their own lives. If someone gains better understanding of their psychological classification, or type, then they would also acquire an improved

insight into the talents, vulnerabilities, and pitfalls that are associated with this type. People might then take this information into account in all kinds of decisions: who to marry, what techniques to use when studying, or what kind of job to apply for. Heymans hoped that people would regard themselves as 'material' with a certain plasticity, so that they might mould themselves into their desired shape.

The theory achieved this goal, at least for a time. For a decade or two, it became a popular pastime to categorize yourself, your friends, and your family into one of the types. But the societal application was broader than that. Many teachers had attended Heymans' lectures and used this knowledge in their classrooms to better understand and guide their students. The theory was also often mobilized in the discussions surrounding suffrage and women's rights, and in broader discourses about gender differences. Finally, as we saw in the prologue, the theory came up in conversations about accountability in the judicial context. When newspapers reported on trials, it was not uncommon for the description of the accused to also mention their type and explain the resulting implications for their culpability.

## 3.3 How the typology was used in later research

### In the Netherlands

Heymans' pioneering work served as inspiration for a wide range of scientific investigations. Just a few years after the earliest lectures, in 1913, a psychiatric dissertation on a typographic study of delinquents was defended. This thesis was followed by long series of dissertations inspired by Heymans' work, discussing a range of social groups such as painters, poets, vagabonds, arsonists, and many more. Another example was a sociographic study that identified dominant types in the local population of Groningen and Drenthe.

However, this extensive interest did not last. Towards the end of his own life, Heymans noted the waning interest in his work and, more importantly, in the general approach that he deployed when investigating psychological topics. His strong belief in the steady progress of science had suffered a major blow from the First World War. Heymans' almost naïvely positive belief about human rationality — the conviction that people would mostly do the right things if they only had sufficient knowledge of the facts — was crushed by the brutal

conflict. All the pointless death and devastation brought an unwelcome confrontation with the reality that humans were apparently far removed from the rational beings that Heymans had theorized them to be. In his retirement speech, he spoke disappointedly about the observation that the 'irrational' schools of psychology, as he called the more existential and phenomenological schools, were preferred over the type of work he had pursued in his career. As his own types faded from the broader consciousness, there was a growing interest in other typological systems, such as the body types of Ernst Kretschmer (1888–1964) or the more dynamic characterological system of Ludwig Klages (1872–1956).

Because of this major shift in psychology in the Netherlands, Heymans' work ended up not as a shining example psychologists wished to emulate, but rather as the 'old-school' psychology that the next generation broke away from. Van Strien has characterized the later move as an 'alienating' kind of psychology that was much less concerned with how relevant the research might be in daily life. When one of these later psychologists, Benjamin Jan Kouwer (1921–1968), delivered his own professorial speech in 1955, it was interpreted by many as a deliberate counterpoint to Heymans' speech from the same podium decades earlier.

Around the centenary of founding his first laboratory, in 1992, Heymans' work experienced something of a revival. After the Second World War, the new professor of personality psychology, Kouwer, had kept the line of research alive by conducting a study in which he applied new statistical techniques to Heymans' original survey data. Around the centenary, a range of researchers dived into the same materials with a renewed interest to test more recent hypotheses. For example, Kouwer's student Jacobus Johannes van der Werff (1925–2017) conducted a factor analysis to see how well the big-five personality theory could be reproduced on the basis of this old data. The consensus in much of this line of research was that, despite the 'primitive' data-collection methods and limited options for analysis, the data held up surprisingly well. Heymans' dimensions are still regarded as foundational by contemporary personality researchers, even if they no longer link them to Heymans.

### Internationally

Beyond the Netherlands, Heymans also received recognition. The only country in which he had a large impact was France, where René le Senne (1882–1954) pursued a line of research inspired by the cube. Some decades later, the polish researcher Jan Strelau (1931–2020) also paid attention to Heymans' typology. In other countries, researchers were inspired more by Heymans' methods, rather than his results. Wiersma's study into the secondary function received attention mainly in England by Charles Spearman (1863–1945), who developed an entire line of research into the concept of perseveration. He had been inspired during his studies in Germany, where he had come into contact with Heymans' work. Spearman ended up as a more legendary name in psychology than Heymans. However, through Spearman, Heymans' methods and line of thinking were at least perpetuated, and given an even more solid methodological foundation.

Heymans also had a big fan in America, whose name is very familiar to contemporary personality psychologists: Hans Eysenck (1916–1997). Eysenck credited Heymans as the founder of modern personality psychology. He celebrated Heymans for taking a different approach than his predecessors, and for distinguishing himself by finding empirical evidence for the otherwise hypothetical 'common sense wisdoms' that had served as the basis for personality research prior to Heymans. Eysenck argued that Heymans had been a hundred years ahead of his time, and formulated his own theory of personality with strong similarities to Heymans', using two dimensions instead of three. These dimensions were also linked to the older system, with Eysenck relating his 'neuroticism' dimension to Heymans' 'emotionality', and the 'introversion–extraversion' dimension to his precursor's 'primary–secondary function'.

## Closing remarks

From this context about Heymans' life, work, and motivations, it is clear that his theory had a groundbreaking origin and a large impact within Dutch society, as well as on the international discipline of psychology. While it appears to have largely faded from public knowledge, signs of its continued significance still crop up occasionally.

In the last few decades, several dissertations have been published which emphasize its relevance for a contemporary audience. In 1998, Hendrik J.

Visser published his dissertation on its relevance for psychotherapy,[10] and in 2011 Kars Dekker defended a thesis focusing on Heymans' earlier work, which contains a much more extensive biography of his life.[11] My own dissertation will continue this tradition of attempts to draw academic attention to this valuable research. However, as this chapter addresses, Heymans did not want his theory to be limited to an academic audience, but to be available for anyone's benefit. This illustrated and freely accessible booklet was made with the intent to further promote this goal.

10 Visser, H. J. (1998). *Temperament als determinant voor psychische klachten en welbevinden: de actuele betekenis van Heymans' persoonlijkheidstypologie* (Doctoral dissertation, KUN).

11 Dekker, K. (2011). *Gerard Heymans Herlezen - Bewustzijn en Methodologie* (Doctoral dissertation, Rijksuniversiteit Groningen).

# Epilogue

When it became clear that my PhD dissertation would focus on Heymans' Cube, I wanted to acquire my own copies of the original books. However, finding these old books was challenging. Through an online second-hand book platform, I found the contact information of someone who owned a copy, and I immediately emailed this person with a request to buy the books.

The man soon called me to say that the books were somewhere in his attic, certainly, but that he might need some time to find them in the mess. His sister had urged him to get rid of all the old things he had collected over the years, which is why he had listed many of them for sale on various platforms. He would get in touch again when he had located the books.

The next day, I received another phone call. After rigorously combing through his attic, the man still couldn't find them. In the end, he discovered that they were in an entirely different spot than expected: on his nightstand. Realizing which books I wanted, he told me that the books meant a lot to him. They had made a great impression and he had regularly reread them over the years. Clearly, this man was loath to part with these books, so I suggested that I could find them elsewhere and that he should hold on to his copies. But no, he insisted that his sister was right and that he should really reduce his clutter. He would send me the books right away.

During my studies, this memory stuck with me. And sure enough, after spending time with the books myself, I couldn't help but notice that I was learning a lot of valuable things. Even though I had a Bachelor's and Master's in psychology and the books were more than ninety years old, they still seemed to have something 'new' to offer me.

This intimate engagement with the text appeared to be precisely what Heymans had hoped for when he wrote it. In his introduction, he explicitly stated that it was written for a general audience. He had kept production costs

to a minimum to ensure the books could be sold at a low price. The language had all the rigor and complexity of academic work, but was also supported by colourful metaphors and examples. Heymans had striven to make the work accessible, attractive, and useful to his audience.

## Why this book?

As far as I could see, however, much of this utility had faded away. Although the theory had experienced a period of popularity and broad engagement in Dutch society, contemporary psychology had moved on. Even at the Heymans Institute, the psychology department of the University of Groningen, Heymans' theory did not appear in the curriculum when I was a student. It seemed to me that this theory, which in the past had meant a lot to people, had all but disappeared from our collective memory.

At least two obvious barriers stood in the way of a broader appreciation. First, the book was written in Dutch and had never been translated into English, although it had been translated into other languages, such as German. However, while German was an important language of psychological communication and publishing in the nineteenth century, nowadays English is the global language of psychology. This shift has made Heymans' work practically invisible to the international audience.

The second barrier was time. The fact that the work was so old had the unfortunate consequence that much of the language, and some of the ideas, were undeniably old-fashioned. Although the theory holds up surprisingly well, it remains a work from a different era. A translation for present-day audiences would require a certain amount of updating to make it accessible to the public once again.

So I decided to get to work. Figuring this was quite an ambitious project to take on by myself, I recruited a student — Corné, whose Bachelor's thesis had focused on this theory — as my co-author. Later, our team was strengthened by the addition of an illustrator, and was supported by very generous colleagues and friends who offered financial support (thanks Annette and the Open Access book fund!) and otherwise helped to refine the product through review: Diana, Evelina, Sander, Anouk, Chelsea, Maarten, Douwe, and Marijn, your help in making this book is highly appreciated!

## Difficult decisions

Aiming to keep our version concise, accessible, and relatable, I opted to produce an adaptation rather than a full translation of the original work. A complete translation was undesirable, since it would mean including the aspects and sections that didn't age well. For example, the original work has a chapter on hereditary versus environmental influences on personality, and a chapter on the different vocational groups (especially various types of artists). The nature of these vocations, as well as contemporary views on the importance of nature versus nurture, are very different from what they were a century ago. Finally, the descriptions of the types made extensive use of the biographical research in their analysis, aiming to build on the readers' familiarity with such famous figures. However, in my own experience most of these names have lost much of their prominence and would no longer have the desired effect. While certainly entertaining, I felt that these more era-sensitive lines of analysis could be excluded to make our material more concise.

However, adapting the work rather than translating it comes with its own set of difficult decisions. My goal of popularizing the theory is somewhat at odds with the historian's duty to do justice to the original work and its context. As a historian, I tried to stick as closely as possible to the original work, while making sure the work was still accessible to the audience I wanted to reach. This involved making a few tough decisions and thinking carefully about how to strike that balance.

For example, one of the most challenging decisions concerned the terminology for the types. Their original names had rich historical meanings and carried connotations that would be impossible to replace. The easiest option was to preserve the original names. Yet, I could hardly imagine anyone below the age of sixty relating to descriptors such as 'phlegmatic' and 'choleric'. And then there was the issue that some of their connotations were quite negative, such as with the 'nervous' type. I suspected that some people, who might otherwise be curious or interested, would potentially be put off by these old-fashioned names. Ultimately, I decided to stick with the original terms and provide the necessary context at the end of the book.

## Chapter rationale

Corné and I re-examined the original books and made the strict decision to adapt only the general theoretical framework (Chapter Two in the original, Chapter One in this book) and the types themselves (Chapter Three in the original, Chapter Two in this book). Since the original work is best understood in its historical context, I also added a third chapter at the end, to convey some of this background and to give insight into Heymans' life and motivations (Chapter Three in this book).

Given that Corné had already taken an interest in Heymans' theory, he was an ideal candidate to write the theory chapter. Going paragraph by paragraph, he followed the original work and selected the most important elements of the theory to adapt. I adapted the types chapter and took on the writing of this epilogue, the prologue, and the chapter on the origin, methods, and impact of the original work.

The types chapter covers the eight corners of the cube, explaining how their personalities manifest, their supposed underlying mechanisms, and pointing out the most noteworthy characteristics for each type. Again, I followed the structure of the original chapter, but I took some liberties in an attempt to make it more relatable and concise. Let me highlight two rather significant changes.

First, instead of listing 'famous' personalities I added an introduction for each type in italics. Given that the theory itself is relatively dry and technical, my idea was to draw in the reader by inviting them to use their imagination. The second change is that, in the original work, for some of the types, the theory is followed up by a description of pathological syndromes. Heymans reasoned that when personality traits become too pronounced, they could develop into mental disorders. For example, an overly emotional person might be treated for 'hysteria'. Today, the classification of hysteria no longer exists, confronting us again with the problem of dated language and concepts. What also didn't help is that, for some types, this section would take up half the space of the entire type description, while in other cases no pathologies were identified. That meant that including the pathologies would make the overall flow of this chapter quite inconsistent. Leaving them out was one of the easier decisions, because it saved a lot of space while also maintaining our aim to stay closer to a contemporary framework.

## The packaging

Finally, some considerations regarding the broader nature of the publication. In line with our goal of making the theory broadly accessible — as broadly as possible — the book is an Open Access publication. We see this open access as a proper extension of the original author's ambitions. For similar reasons of accessibility, we wanted to have illustrations that support the theory. Heymans used colourful metaphors in the original work, and many of the illustrations in this book are directly based on the original text. A picture is proverbially worth a thousand words, and in this case, translating the metaphors into illustrations was a great opportunity to make this complex theory more intuitive, appealing, and easy to understand.

For anyone who can read Dutch and has become interested in the original work, I am pleased to announce that it has been fully digitized and is openly accessible through Delpher.[12] Having a look is recommended for all the reasons listed above. It has a lot to offer that we could not include in this version. I hope you have enjoyed this adaptation of Heymans' Cube, and will recommend it to anyone who you think might enjoy it as well. The digital version is free anyway!

Rinske Vermeij

12 Heymans, G. (1932). *Inleiding tot de speciale psychologie.* De Erven F. Bohn.
Part one: https://resolver.kb.nl/resolve?urn=MMKB24:060905000
Part two: https://resolver.kb.nl/resolve?urn=MMKB21:041144000

Gerard Heymans (1857-1930) was the founder of psychology in the Netherlands, and established the first psychological laboratory. After becoming professor, he first looked for general psychological laws, and later became interested in how people differ. Heymans investigated this question by studying biographies and collecting survey data. With this rigorous approach that far exceeded the standards of his time, he arrived at three basic dimensions in which people can vary in their temperament. This became the renowned 'Heymans' Cube'.

Through decades of lectures for students and professors of all faculties, the theory became widely popular. This book provides a translation and adaptation of the original work, Heymans' *Inleiding tot de speciale psychologie* (1929). The authors explain Heymans' theory in an accessible way and make it come alive through illustrations inspired by the original text.

**Rinske Vermeij** completed her Bachelor and Master in Psychology at the Heymans Institute of the University of Groningen. Her Master Thesis on the place of qualitative research methods in psychology was awarded the Jan Brouwer Thesis Award. Afterwards she returned to the university to pursue her PhD on the societal relevance of the Heymans Cube.

**Corné Vroomen** oriented himself broadly throughout his education, with the ambition to disseminate psychological knowledge and expertise. For his master Theory and History of Psychology, he writes his thesis on how to make psychology available as a course for secondary education in the Netherlands.

Douwe Draaisma: *'The mysteries of personality, captured in a Cube. What a wonderful introduction to his theories this is!'*

University of Groningen Press