The Biological Bases of Our Emotions and Motivations

Why you can't upgrade your firmware but you can change your operating system

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Facing life's struggles can be a little easier with an understanding of the factors and forces ruling our emotional world. Affect script psychology (ASP) provides an accessible, informative framework which addresses the biological bases of all human emotions and motivations that helps us better understand ourselves, our behaviour and our relationships at home, at school, at work, and in the broader community.

It gives us the means not only to gain a better understanding of our personality and those of others around us, but also gives insights into how we can change those patterns of behaviour that may not have been serving us well. Knowledge is power, and armed with an understanding of ASP we can learn to recognise our emotional patterns and, if necessary or desirable, work to change those patterns into more life-giving, nurturing ones.

Silvan Tomkins, who sets out his understanding of ASP in his four-volume work *Affect Imagery Consciousness*, identified nine basic emotional reactions (the affects). They are as common to all of us as are our needs for oxygen, water and food.

At the biological level, we all experience the same emotional triggers in response to positive and negative stimuli in our environment as we do to the joys and troubles in our relationships with one another. At the same time, we understand intuitively that it is our unique life experience that finds expression in our individual emotional lives (our scripts). This is what makes each of us who we are - and how our stories colour and influence our emotional lives.

With these basic building blocks - of affects (the biological or physiological response) and scripts (the unique influence of our particular life experience, learning and socialization) - Tomkins's ASP provides insights into the way in which we humans function individually, with significant others, and in the many groups to which we belong. It helps us understand our emotional reactions as well as our desires and needs in the many different relationships that we form, and in the many stages of those relationships.

It helps us understand ourselves and others. What could be more important?

The Affect system and human emotion

The affect system in the human being is not located in a specific organ, but is rather an executive function of many different bodily systems. The affect system functions through the brain and central nervous system, the sensory organs and motor muscles, as well as aspects of the hormonal system. As a coordinated system of many parts, it has evolved to enable us to process sensory information, i.e. to make sense of the overload of information coming in to the body by focussing our attention at any time on only those stimuli most salient at that point.

The biological basis of the affect system, and the subsequent human emotions that arise from them, can be understood by analogy with the humble computer (Nathanson 1992). Computer systems consist of hardware (the silicon chips, components and connections), firmware (coded instructions that drive these physical components behind the scenes) and finally the software that we install and run on our computer in order to perform the myriad tasks we set the machines each day.

At the hardware and firmware level, all computers are essentially the same. While there might be small differences between different manufacturer's models at this level, the hardware and firmware in each machine perform the same functions and serve the same purposes. At this level, my machine and your's are very similar – effectively interchangeable. So it is with our emotional 'machinery' – we all have essentially the same 'hardware.' This hardware consists of the sense organs, the neurotransmitters and hormones that communicate information, the muscle systems and endocrine glands that respond and initiate information, and the central nervous system itself.

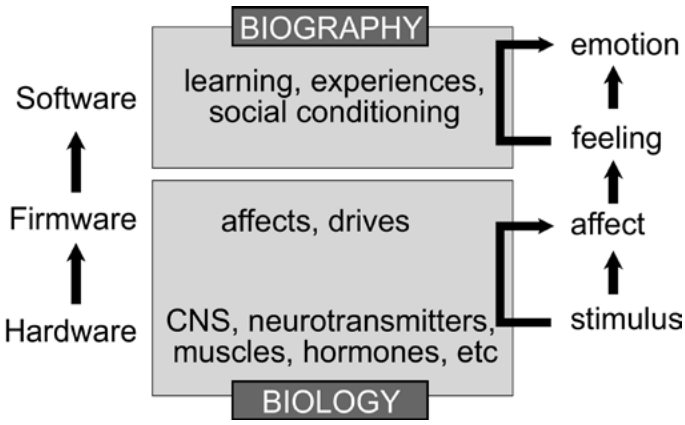

Figure 1 - The computer as metaphor for the human emotional system

At this level, we are all essentially the same, given exceptions where disease or injury has resulted in deficits. At the 'firmware' level we have the basic biological drives that we all share – the food drive, the drive to take oxygen into the body, the drives to expel waste products and the sex drive. While these basic drives might find some slight differences in expression from person to person under their particular higher-level cognitive functions, they are common to all of us at the biological level.

Similarly, our bodies' affect system operates at this biological level of 'firmware' – below our consciousness. The nine basic affects (explored in more detail later) are specific responses to particular stimuli that are sensed by the body's hardware. The firmware triggering of a particular affect results in a set of physiological changes of which we become aware as a feeling. The significant point here is that these affects – and the conditions that trigger them – are part of our 'firmware,' i.e. they are common to all of us.

How we become aware

Any stimulus which causes an affect to be triggered is amplified by a physiological response on the face and in the body. The response is caused by a sequence that starts when the triggering of an affect produces a set of physiological responses. It is only when these physiological changes reach our awareness that our attention is drawn to the initiating stimulus. The environmental stimulus of a sudden physical threat, for example, would produce a set of physiological responses in the body including a quickening heart rate, sweaty, clammy hands, and a pale, cold face as blood is redirected to the major muscle groups to prepare for a 'fight or flight' response. Our attention is drawn to the threat when we become aware of this amplified physiological response.

This stimulus, affect, response sequence can be referred to as a scene – an SAR scene. Once a particular affect is triggered, however fleetingly, our conscious awareness of the physiological response appears to us as a feeling. We become aware that we feel excited, or angry, or fearful, because of the physiological response that occurs as a result of the affect being triggered. Such feelings (the conscious awareness of an affect) then prompt the retrieval of memories of similar incidents in the past. Often, this retrieval of past memories occurs below the conscious level to give rise to that lump in our throat or the butterflies in our stomache. We aren't necessarily actively thinking about these past events, they just rise in the mind to make us aware of how we feel.

It is the mixing of the physiological response to this innate affect with the sum of all of our memories of experiencing

this affect in the past which gives rise to an emotion (Nathanson 1992) as depicted in Figure 1. Where we can differ significantly from each other is at this higher level – that of our 'software.' This 'software' is the collection of experiences, learning, and social conditioning that is held in our memory – it is the personal narrative upon which our identity has been constructed. It is at this software level that we are all emotionally unique.

How our biography changes our emotions

Whereas the affect system is biological – that is, we all share the same basic affects (and the physiological responses they initiate) – the resulting emotion that we feel is largely biographical in origin, due to the differences in our personal narrative to this point in history. Once our memories and experience become involved, the universality of the affect is transformed into the uniqueness of the particular individual's emotion. Tomkins referred to these emotional (biographical) responses – and what we then tend to do in response to these emotions – as our scripts (as in the theatrical sense).

These scripts that follow from our emotional responses are also unique in the sense that they are dependent upon our own life experiences, but there are often some basic commonalities among these scripts across individuals. The human condition is such that some key scripts, while not genetically determined, are almost certain to develop given the essential commonality of the human experience – particularly within our given family, societal and racial groupings. This is not surprising since the experience of growing up and living in these groups, which is the biography contributing to the development of the scripts, will have some essential similarities for all members of the family or society.

The nine basic affects

Tomkins defined nine fundamental affects that we have evolved to serve our needs to process stimuli (for a more complete treatment of affect theory and affect script psychology, see Nathanson 1992 or Kelly 2009, 2011). Of these nine, two are positive or pleasant affects, one is neutral, and the remaining six are negative or unpleasant affects. It is just part of the human condition that there are more negative (punishing) affects than there are positive (rewarding) affects.

Tomkins (2008) identified that affects 'make good things feel better and bad things feel worse' and that this is how they direct our conscious attention to salient stimuli in the environment. The nine innate affects identified by Tomkins – and common to all of us – are listed in Table 1.

Positive Affects	Interest–Excitement
	Enjoyment–Joy
Neutral Affect	Surprise–Startle
Negative Affects	Fear–Terror
	Distress–Anguish
	Anger–Rage
	Disgust
	Dissmell
	Shame–Humiliation

Table 1 – The Nine Innate Affects

It is important to remember that nothing gets our attention – that is our conscious focus – unless at least one of the nine basic affects is triggered. This is how the affect system works to filter out all but the most salient stimuli at any particular point in time. Nathanson (1992) has likened this function to that of a spotlight on a crowded stage. Once the spotlight falls on a particular actor, our attention is drawn to that character over all others on the stage.

In a similar way, the affect 'spotlights' only that stimulus that needs our immediate attention. The nine basic affects could therefore be imagined as a series or bank of spotlights, each with their own colour and intensity, firing separately or in sequence, but always driving our conscious attention in particular directions.

Seven of the nine basic affects are named after a range between two qualitatively different extremes. For example, the positive affect of *Interest–Excitement* ranges from mild interest at one end of the spectrum, to passionate and driven excitement at the more extreme end.

Six of those affects evolved to respond to the rate of change of the density of neural firing in the central nervous system. The relationship between the pattern of the information (the rate of change in density of neural firing) and the consequent affect triggered can be summarised as in Figure 2. The stimulus can either cause a steady, constant density of neural firing, an increase in the density of neural firing, or a decrease in its density. These are the three options, but there are variations in the rate that cause other distinctions.

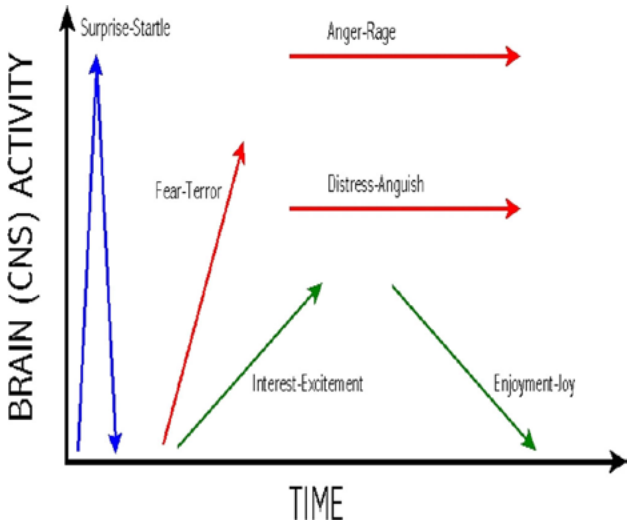

Figure 2 - Relationships between Nature of Stimulus and Affects (after Kelly 2009)

Increasing brain activity

When the pattern of the stimulus causes a steady, but acceptable, increase in central nervous system (CNS) activity, the affect *Interest–Excitement* is triggered. This positive affect rewards our intent interest in something in our environment. It feels good to be interested, to be engaged. Physiologically, the response is to focus on the object of interest with what is recognised in infants as the "track, look, listen" response, i.e. with eyes focussed on the object, perhaps brows furrowed, head following any movement.

Of all the affects, it is probably *Interest–Excitement* which is triggered for us most often every day. We all go through our days moving our Interest from one object or task to the next. We don't often notice that we are interested in something – we just are. It is usually only when that *Interest* has increased in intensity towards *Excitement* that we may notice our physiological response and that the affect leads to conscious positive feelings and emotion.

It is on the faces of infants that the purest physiological response to each of the nine affects can best be seen. Part of the social conditioning that becomes our biography is the capacity we develop of limiting or masking the expression of affect directly on our faces. We will explore a little of this masking – and its consequences for our emotional and social lives – later.

In the meantime, we can use the faces of infants to demonstrate the facial response prompted by each of the nine innate affects. These facial expressions are a key part of the physiological response of which we become aware when an affect becomes a feeling.

Interest–Excitement on the face of the infant looks like Figure 3. In this figure the young child is clearly focussed on something, with brows down, and eyes fixed on and tracking the object. There is also a small (invisible) increase in the heart and respiratory rates.

Figure 3 - Interest–Excitement

If, instead of a gentle increase in CNS activity, the rate of increase of the stimulus is too rapid to be comfortable, then the negative *Fear–Terror* affect is likely to be initiated, with the physiological response including all the features of an adrenaline rush – sweaty hands, eyes frozen on the threat, blood supply redirected to the major muscles.

One could readily imagine that this *Fear–Terror* affect may have been the first to evolve in order to prepare for the fight/flight response in the face of an imminent threat. It is worth noting that only a small increase to the rate of increasing CNS activity which triggers *Interest–Excitement* is able to result in *Fear–Terror*.

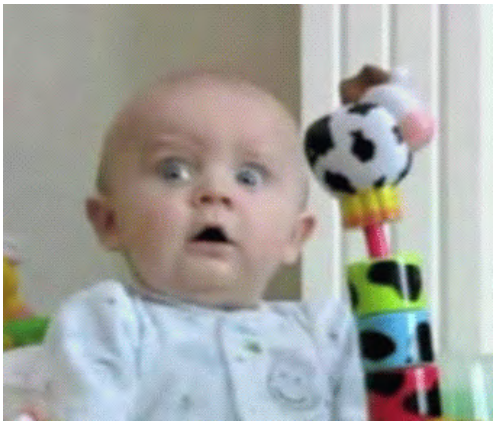

Figure 4 - Fear–Terror

For many of us, there can be a fine line between risk–taking behaviour that excites us, and what might terrify us. Indeed, what terrifies one person may only cause excitement in others, and vice versa. This underlies the popularity of horror movies and ever more extreme roller coasters and thrill rides as entertainment.

In Figure 4, the infant displays *Fear–Terror* with the eyes wide open in a frozen stare. The face is cold and pale, the hair on the back of the neck stands up and there is a strong increase in the heart and respiratory rate to prepare for possible 'fight or flight.'

As shown in Figure 5, the *Surprise–Startle* affect is triggered by short, sharp stimuli and simply acts as a 'reset button' for the emotional system.

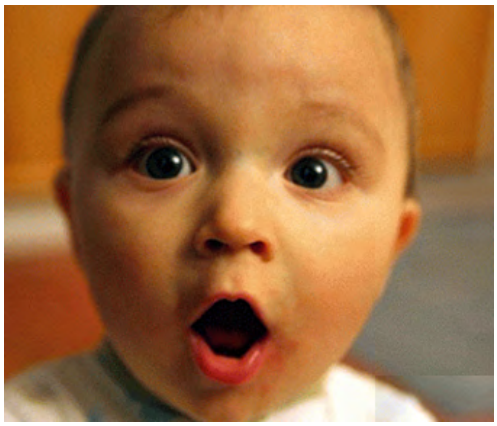

Figure 5 - Surprise–Startle

As for each of the affects, the physiological response takes on the characteristics of the stimulus itself. For *Surprise–Startle*, this means that the physiological response is similarly brief in duration and sharp in nature. *Surprise–Startle* can be followed by either positive or negative affect being triggered, but its major function is to grab attention and reset the system.

As shown in Figure 5, the facial expression includes the eyebrows rising, eyes blink and then wide open, and the mouth in an "O" shape. A vocalisation or sharp intake of air often accompanies the facial expression.

Decreasing brain activity

A gentle decline in the intensity of the stimulus and the subsequent CNS activity, as can come about in reaching the denouement of a story, or the punch–line of a joke, gives rise to the *Enjoyment–Joy* affect, the second positive or rewarding affect. In the case of hearing a joke, the narrative that leads up to the punch line engages our *Interest*. We are trying to piece together facts hidden in the story in order to make sense of it. Once the punch line is delivered, this need to work things out disappears – it has been resolved for you, and CNS activity is dropping off. This reduction in CNS activity is inherently rewarding and hence the positive affect *Enjoyment–Joy* is triggered.

Figure 6 shows the facial expression resulting from *Enjoyment–Joy*. It is the most relaxed facial expression of all the affects. In genuine *Enjoyment–Joy*, the mouth is widened in a smile and the eyes are creased as the muscles around the eyes become involved.

Figure 6 - Enjoyment–Joy

It is the rate at which the reduction in CNS activity occurs in this affect triggering which determines where on the spectrum of *Enjoyment* through to *Joy* the response occurs. A gentle reduction can lead to mild enjoyment, or contentment, indicated by the smile. A rapid decrease, as in hearing the punch-line of a joke, can prompt the affect *Joy* and lead to a laugh.

Steady state brain activity

Two affects result from steady state stimuli, both of which have lasted too long to be pleasant. In the first, a steady state unpleasant or punishing stimulus triggers the affect *Distress–Anguish* in which the incessant nature of the stimulus is reflected in the ongoing distress it causes. The physiological response which results could include rhythmic sobbing or wailing, again reflecting the incessant nature of the affect and stimulus. For many, modern life is a continuous experience of low level distress. We refer to this as the stress of modern life, however, many authors have suggested that this 'stress' is simply the feeling that arises when the affect *Distress* becomes conscious for us.

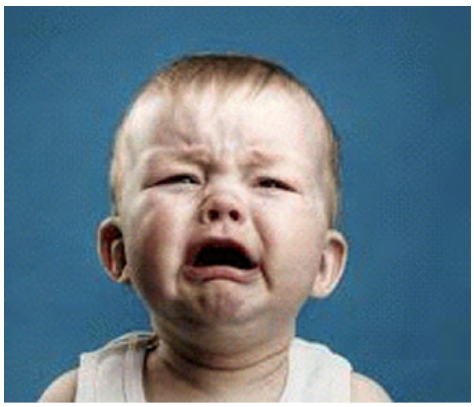

Figure 7 - Distress–Anguish

The infant in *Distress* in Figure 7 is showing the typical accompanying facial expression characterised by arched eyebrows, crying or sobbing, and the mouth with turned-down corners. Interestingly, the facial expression of *Distress–Anguish* is one that is often not effectively masked in adults, especially at the *Anguish* end of the spectrum. Perhaps the emotional intensity of the *Anguish* affect simply overwhelms our attempts to mask it.

Figure 8 - Anger–Rage

If the stimulus is steady state, and of intolerable intensity, the affect *Distress – Anguish* can be transformed into the more active *Anger – Rage* affect. Being angry feels like a more powerful position than feeling distressed and may be a preferred mode of operating for some people. While there is shown in Figure 2 a distinct gap between the level of CNS activity required to prompt *Distress–Anguish* and the level necessary to initiate *Anger–Rage*, the effective size of this buffer differs from one person to another. Some may seem imperturbable even in the face of continually escalating negative stimuli, while for others (those quick to anger) there is very little extra stimulus needed beyond *Distress* to cause them to fly into a *Rage*. This is how a seemingly minor traffic event can trigger road rage in a person who is already experiencing high levels of stress in their lives.

In Figure 8, the infant displays the typical *Anger–Rage* response including increased muscle tension in the face, a reddening of the skin due to increased clood flow, a frown, and a scream of rage. In the adult, *Anger–Rage* is often accompanied not by such obvious facial displays and vocalisations, but rather by a clenched jaw, as *Anger* is one affect whose expression that we particularly try to mask as a result of our socialisation.

Drive based affects

Two further negative affects evolved presumably to protect us against an unbridled hunger drive that might otherwise encourage us to consume unsuitable food. The first, *Disgust*, is initiated when something we have tasted turns out to be rotten, and was originally to prevent us from eating tainted food. In the mild form, this affect might result in spitting food from the mouth. In more severe cases, where the food is already taken into the stomach, it will result in ejecting the offending food from the body by vomiting.

In Figure 9 the *Disgust* facial expression involves a forward movement of the head, the tongue protrudes, pushing down the lower lip, and often a vocalisation such as "yuck!"

Figure 9 - Disgust

While this affect initially evolved in order to moderate the hunger drive and hence protect us from spoiled or poisonous food (something that we have taken into the body expecting it to be "good" only to find it repulsive), from a psychological viewpoint *Disgust* affect can also cause us to reject people we once considered good – but for whom we have now lost our 'taste.' A significant proportion of broken relationships and divorces are the result of one partner developing a *Disgust* for the other.

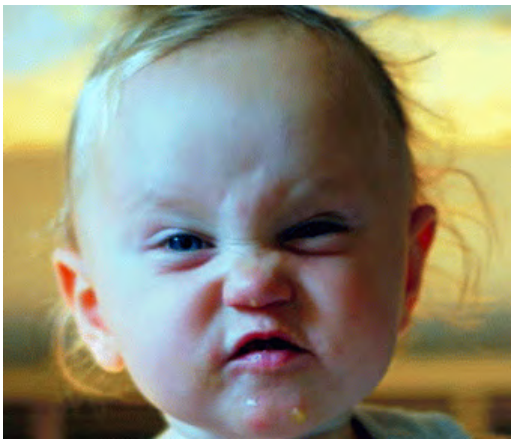

Figure 10 - Dissmell

Tomkins coined the term *Dissmell* to describe the second of these negative affects. It is the instinctive response to something that smells rotten or repulsive, which causes us to "turn up our nose". It therefore protects us against even taking in food that may be tainted or poisonous. Imagine

yourself smelling the carton of milk in the refrigerator only to find that it has turned sour. That physical reaction is response to the affect *Dissmell*. The facial expression for this affect is shown in Figure 10 in which the head is drawn back, the upper lip wrinkled and the nose is raised and creased. A vocalisation of "Eeewww" often accompanies the facial expression.

While again this affect may have originally served to help us avoid even sampling spoiled or poisonous food, it can also prompt us to reject things or people before we have come to know them – which is perhaps the fundamental basis of most prejudices. In this psychological sense, *Dissmell* is the affect at the heart of prejudice and bigotry – it is effectively saying "I don't yet know you, but I don't like you."

The shame affect

The final affect, *Shame – Humiliation*, was also the last of the nine affects to evolve. *Shame – Humiliation* is triggered by any impediment that occurs to disrupt our enjoyment of the positive affects, *Interest – Excitement* or *Enjoyment – Joy*. Note that despite its name, the *Shame – Humiliation* affect itself is not the adult concept of feeling ashamed about something. Returning to the spotlight metaphor, the affect *Shame – Humiliation* simply shines the affect spotlight onto something which has impeded positive affect. This is a biological process and it is accompanied by a physiological response – the muscles of the neck and shoulders lose tone, the face and head drop, perhaps a blush appears, as in Figure 11.

Figure 11 - Shame–Humiliation

The purpose of this physiological response is purely to alert us to the fact that there has been an impediment to our ongoing positive affect. Recognising that there is an interruption to feeling good (positive affect) is of itself punishing. It feels bad to know that you're not feeling good! This is why *Shame – Humiliation* is classified as a negative affect. It doesn't feel good.

Nathanson (1992) aptly describes the universal physiology of the *Shame–Humiliation* affect response as follows:

> "On the face, shame-humiliation affect is signaled by the blush, but it is also expressed by a visible slump as muscle tone in the neck and shoulders is suddenly decreased. The look we call "shamefaced" includes this slump plus a tendency to turn away from whatever had seemed so interesting only a moment earlier. Shame-humiliation produces what I call a cognitive shock. No one can think clearly in the moment of shame."

A simple example of where *Shame* affect might be triggered is when you're enjoying a chat and sharing a coffee with a good friend. The conversation is a source of ongoing positive affect for you both. In the sharing there is *Interest–Excitement* in the novel things you are discussing, and *Enjoyment–Joy* in simply being together. If for example, while you are eagerly regaling your friend with a story about your recent holidays she momentarily looks at her watch, the likely result is that *Shame* affect will be triggered in you.

There has been a momentary impediment to the *Interest–Excitement* and *Enjoyment–Joy* when it appears to you that she may not be as interested in hearing your story as you expected. Neither of you has done anything "wrong" about which you should feel ashamed. There has simply been an impediment to your ongoing positive affect.

The *Shame* affect has been triggered to alert you to that. In response you will feel a temporary slump and, depending on the interpretation you place on the act of your friend glancing at her watch, you will either bring the story to a close or work through the *Shame* affect to continue with the story.

The adult (or childhood) concept of feeling ashamed is a product of our biography as well as our biology. When the spotlight of *Shame* affect shines on some aspect of the self that falls short of expectations or social norms, then the physiological response of the shame affect is amplified by feedback from our biographical history of all those moments in which we have experienced *Shame*. The result is the painful emotion shame. In that moment, the physiological response actually amplifies the *Shame* affect. The face dropping — and likely also displaying a blush — makes conscious that the internal pain is now visible to others, adding to the level of discomfort experienced.

Figure 12 - Shame Affect in an Adult

As shown in Figure 12, the *Shame–Humiliation* affect triggered in the adult looks (and feels) identical to that in the infant. The significant difference for the adult is that the subsequent emotional response that ensues once the adult's biography is engaged is likely to be much more painful, simply because of the much larger pool of previous Shame–Humiliation experiences brought back through this magnification of scenes from the person's biography.

While shame – or more precisely the emotion of feeling ashamed – is often viewed negatively and as an unhelpful emotional response, the affect *Shame–Humiliation* evolved to serve a very useful purpose, namely, to help us identify the interruption of ongoing positive affect. As we shall see later, this is essential to proper functioning of relationships and to learning.

Affective Resonance, Empathy & the Empathic Wall

In addition to being triggered by environmental stimuli, affect can be triggered by affect expression in others, and this affective resonance is a large part of how we communicate non-verbally with other people. We are happy when we are around others who are happy, and we share the pain of those in sorrow.

Anyone who has been stuck in a waiting room or aeroplane cabin in which a baby is suffering *Distress* and continually crying has experienced affective resonance, and has felt their own *Distress* rising in response to the unrelenting affect displayed and broadcast by the infant. Fortunately, positive affect is also contagious – as evidenced by the lengths people will go to achieve a smile from a baby. The smile itself is rewarding to the adult, since it triggers *Enjoyment–Joy*. It is a consequence of this that some of the most commonly watched video clips on the Internet are of babies laughing and giggling. It is almost impossible not to be drawn into the laughter.

The ability to actually feel what another person is feeling, through affective resonance, is a key part of empathy. Being able to empathise with others is generally considered to have both cognitive and affective dimensions. In the cognitive realm, the first step towards empathy is perspective–taking, i.e. being able to think through what the experience of the other person might be.

This cognitive process draws on your own past experience of similar situations to imagine what the other person might be feeling. The next step in empathising, though, is to actually feel what the other person is feeling through the process of affective resonance – that is, to have one's own affect triggered by the affect display and expression of the other person.

While being able to empathise with others in this way is a critical ability that enables us to form relationships and develop understandings about others, it is also important in some situations to be able to resist such automatic affective resonance. This is referred to as developing an empathic wall such that the expression of affect around us does not automatically trigger that same affect in us.

There are numerous circumstances in life in which it would not be helpful or desirable for us to immediately respond in this affective way to the affect of others. Some of these are in professional situations in which we might need to retain a certain objectivity without getting caught up in emotional responses, but it can also be necessary in other relationships as well.

Just as being able to erect an empathic wall when appropriate is an important survival skill, knowing when and how to let down the wall at other times is also critical. In personal relationships, letting down the empathic wall is one key requirement for the development of intimacy.

Scripts

The human brain is an expert pattern-recognition engine. When we look at the image in Figure 13, our pattern-recognition circuits immediately perceive the 'white square' which appears to obscure parts of the four black circles. Our emotional brain is similarly expert at recognizing patterns. In the discussion of the emotion of feeling ashamed above, we said that as we experience *Shame–Humiliation* affect later in life, our memories identify all previous examples of having this affect triggered, and that it is this flood of affect-laden scenes that come to mind that makes feeling ashamed so increasingly painful. If someone is hurtful today it will call up previous occasions in which you have been hurt. Our emotional brains are expert in drawing on previous similar emotional scenes in order to interpret what is being perceived in the present.

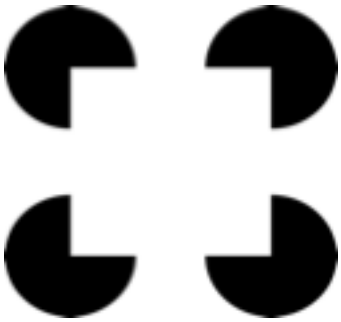

Figure 13 – The square illusion

The human brain is also expert at learning, by which we mean knowing and remembering things that help us in our daily living. Once we have mastered a skill through repetition – from simple ones such as tying a knot, through to complex ones like safely starting and driving a vehicle – we can do them as if they are second nature, as if they are innate skills.

These two abilities – pattern-recognition and learning – enable us to function effectively in daily life because they reduce the need to work through every new scene that we encounter 'from scratch.' We readily recognise patterns in the scenes we experience and we have learned ways of responding that have suited our purposes in the past. Tomkins notes that these two abilities provide an 'information advantage' for us that allows us to draw on our biography in order to know how to deal with a wide variety of scenes that we experience throughout a normal day, and even to predict what will happen as a result of those scenes.

Tomkins referred to this process of sub-consciously recalling previous similarly affect-laden scenes in order to develop 'rules' or 'guidelines' for how we should respond to particular scenes in the present as our scripting. We develop scripts as a key part of our biography, which provide a distinct information advantage – these scripts enable us to 'know' how to respond, they give guidance as to how we should feel, and they help us predict the possible outcomes of our actions.

Our scripts are the result of our biography – our conditioning, our learning and our experience. Tomkins says that it is through our scripts that the past (our biography) becomes present (influences our feeling, thinking and acting now). Our scripts interpret the past so that we can function effectively in the present.

Writing our first scripts

Our scripts start to develop right from birth as soon as our pattern-recognition and learning abilities begin. One of the first type of scripts we develop are the attachment scripts which bond the infant with his/her primary caregivers, and which are critical to the formation of relationships for the individual later in life. These attachment scripts form through the early experience of the infant (Kelly 2011). If the baby is distressed from hunger or from needing changing for example, the appearance of the caregiver becomes associated with scenes of distress turning into relief (*Enjoyment–Joy* affect).

This drives formation of a script which effectively says 'when I'm distressed, another person can be the source of relief from such negative affect.' Similarly, in this early period the appearance of the caregiver also gets associated with positive affect as the baby is nursed, cradled, and begins to interact with the caregiver, which can be triggers for *Interest* and *Enjoyment* affects. This adds to the attachment script that 'people can also be the source of positive affect.' In all, the attachment script comes to maturity as 'Other people can help relieve negative affect and can be a source of positive affect' leading to 'I'm interested in, and enjoy, other people being interested in, and enjoying, me.' This script is the basis of all future relationships that the individual will form.

Such attachment scripts are just one of many types of scripts that we develop. As well as scripts for physical skills such as dressing, shaving, safely crossing the street, and driving etc, we also develop scripts around how we deal with affect and emotion – both in ourselves and in others – and how we deal with situations, and other people. While our scripts are in many ways going to be unique to ourselves, since no one has experienced exactly the same biography as we have, the human condition means that most of our scripts are likely to share some general characteristics.

The sum collection of all the scripts that we employ in interacting with other people will essentially define our personality, since they guide and control how we relate and respond to others. Someone whose scripts predominantly guide them to trust others, to always see the good in others, and to find the positive in most situations, will seem to others to be a positive and happy, genuinely interested person. That person's personality is constructed from his/her particular sets of scripts.

Affect management scripts, as one example of these sets of scripts, help us deal with the triggering of both positive and negative affect in its many forms. We all have affect management scripts which come into play when we find ourselves feeling angry. Depending on our biography – that is, the conditioning that occurred within our family and society as we grew up – we might have anger management scripts that say something like: 'When I'm

angry, I suppress that emotion at all costs, or bad things will happen.' Another person's biography – based on his experience of anger within his family – might prompt scripts such as: 'When I'm angry, I just lash out at whoever's nearest.' There is obviously an almost infinite variety of anger management scripts that could be developed, and it is this variety of scripts that generates diversity in our personalities.

Changing our scripts

Tomkins identified that our scripts are usually unconsciously driven. We are usually not consciously aware of how the past scenes are coming to influence the present, other than to feel the affect associated with the conflated earlier scenes. Since the operation of our scripts is not usually conscious, it can be difficult to recognise their influence on our feelings and our behaviour.

It is also accepted that the scripts we develop usually only serve as partial, or incomplete, guides. In this way, they require contextual information from the present scene in order to give complete guidance. This can make our scripted responses to current scenes dependent to some degree on the circumstances of the moment.

Scripts, once formed, are persistent and can be very resistant to change, largely to their unconscious nature, but also due to the mind's belief that they have served us well in the past. If there is a particular way in which we have always reacted, to anger for example, then it becomes very difficult to even consciously decide to act in any other way. If you withdrew and hid in your room as a child, that may be your prefered style as an adult. This is true even if it is apparent that our script is not achieving its purpose. Scripts, in this way, can become habitual.

Since our scripts are so resistant to change, we can actually force scenes to fit with our existing scripts, even in the process distorting the information in the current scene, if we have no alternative script into which the new scene would be a better fit.

In childhood and in adolescence in particular, but also right throughout life, we are developing, rewriting and re-developing, many of our scripts. One particular example of script redevelopment during the adolescent period would concern attachment and commitment scripts. The adolescent is in the process of refining their attachment scripts to move from an almost exclusive focus on members of their nuclear family, more towards their peers and potential romantic prospects. The process of schooling, hopefully, will be encouraging them to also develop commitment scripts which focus on learning and discerning their possible future careers.

As we shall see, the scripts that an individual holds can greatly influence their social and learning behaviours, and consequently their level of achievement throughout their lives.

The Central Blueprint

At the heart of affect script psychology, and key to the functioning of an effective individual, is Tomkins's Central Blueprint for Motivation, in which we are believed to be happiest and healthiest when we are achieving the following, in a balanced way:

1. Maximising positive affect
2. Minimising negative affect
3. Maximising the expression of affect (or minimising its inhibition)
4. Maximising the power and ability to achieve 1–3 (after Kelly, 2009)

This Central Blueprint in many ways describes one of the key aims of any group, not surprisingly because most groups wish to have balanced, healthy, happy members.

In affect terms, we would all hope that the predominant affects being triggered in the family, school, team or organisational environment were *Interest–Excitemen*t in whatever the group was hoping to accomplish, as well as *Enjoyment–Joy* at being together with others of like mind and at ultimately achieving success. Of course we cannot escape the human condition in order to be totally "free from fear and want," and so negative affect inevitably arises no matter how diligently we work to prevent it.

When groups come together the high concentration of people will predictably give rise to conflict from time to time, perhaps as *Distress–Anguis*h bubbles over into *Anger–Rage*, or when *Shame–Humiliation* is triggered. The diversity of any population can be a source of *Disgust* or *Dissmell* in the form of (conscious or unconscious) prejudice or discrimination. It would be the hope of all leaders that people never experience *Fear–Terror* while working in their group or organisation, but simple mistakes, a typo in a document or presentation, the announcement of impending change or the sudden realisation of missed deadline or forgotten commitment will inevitably trigger this affect at some level.

Shame–Humiliation is triggered by any impediment that occurs to disrupt our ongoing enjoyment of the positive affects, *interest–excitement* or *enjoyment–joy*. While we may experience scenes involving this affect as initiating the emotions of frustration, disappointment, rejection, loneliness, or feeling ashamed, embarrassed or mortified, the basic affect *Shame–humiliation* simply serves to shine a spotlight on an impediment to the former pleasant

enjoyment of the positive affect. Nathanson (1992) identifies that, since the positive affects of *Interest–excitement* and *Enjoyment–joy* are often experienced through our connection with other people, the *Shame–humiliation* affect is often experienced as an interruption to this pleasant connection with others.

Shame is, therefore, a particularly social affect, and this makes it of great interest to anyone who works with groups or in an organisation. An awareness of affect, how it is expressed and how it resonates can significantly improve your capacity to stay present to difficult conversations. It also allows you to assist others improve their performance by helping them understand and navigate past their particular experience of *shame*.

While it is obvious that action can be taken to encourage group members to meet the first two parts of the Central Blueprint, how or why the inhibition of affect should be minimised (the third goal) may not be immediately apparent. In many social settings, especially those with particular socialisation requirements such as workplaces, the expression of affect is inhibited for good reasons. As described above, affect is contagious. In a meeting room or communal kitchen situation, as in many social settings, such affect contagion could cause serious problems. The negative affects are just as contagious as the positive ones.

Our patterns of socialisation, therefore, tend to cause people to inhibit (or at least temper) the expression of affect. From the point of view of the Central Blueprint, however, minimisation of the inhibition of affect is essential in order to prevent affect from becoming backed–up. Backed-up affect—that is, affect which is not allowed expression—will find an outlet. Anger that is not allowed expression, perhaps in the meeting room, will be turned on someone other than the 'cause' of the anger, for example on less experienced employees.

The fourth goal of the Central Blueprint speaks to the power one has to maintain the other three goals in balance in one's life. The inability, for example, for someone to change circumstances that cause her unrelenting negative affect (i.e. prevent her from minimising negative affect) is a situation in which emotional harm is an inevitable result. This speaks to the need for groups to be attentive to behaviour among its members at times of change.

Responding to Shame-Humiliation

Affect script psychology tells us that, at the biological level, we all share the same nine innate affects. The affect shame–humiliation, for example, produces the same stimulus–affect–response (SAR) scene in every individual for whom there has been some impediment to interest or enjoyment. The same physiological response of a lack of muscle tone in the neck and shoulders – perhaps a blush – can be felt by all for whom this affect has been triggered. Similarly, all people in the very moment of shame affect are in a state of 'cognitive shock' – anyone who has been asked an unexpected question or caught off guard will be familiar with this feeling.

Once we become aware – conscious – that shame affect has been triggered, memories of similar scenes are drawn upon, which in themselves amplify the conscious negative feelings produced by the affect that has been triggered. We refer to this feedback loop, in which our biography has come to amplify and enlarge the initial physiological and affective response, as an emotional state. This emotional state is the end result of a vast array of memories of previously triggered affect. It is this emotional state that then determines which scripts will be played out in response. These scripts are known as Nathanson's Compass of Shame as depicted in Figure 14 (Nathanson, 1992).

The Compass of Shame

Nathanson describes four major libraries of scripts which we typically use to avoid dealing directly with an experience of shame. These scripts enable us to by–pass the painful shame emotion. At each of the four poles of the compass are sets of scripts – ways of behaving in response to the experience of shame – each of which range from the 'normal' through to more serious or pathological behaviours.

Figure 14 – The compass of shame

The sets of scripts found at each of the four poles of the compass can be described as follows:

Withdrawal: At the Withdrawal pole of the compass are scripts that alleviate negative affect by removing the person from the supposed glare of others. Indeed, physiologists have identified a number of biochemicals released in the body in response to the *shame* affect that result in the loss of muscle tone in the neck and shoulders, which causes the face to slump ('losing face') and breaking the connection with others. The resultant downcast face of the person experiencing shame is the typical response, breaking eye contact with those who are perceived to be standing in judgement.

In an organisational setting, these scripts are being employed perhaps by those quiet employees who always seem to find a desk apart from everyone else, or who sit in the corner of the kitchen at lunchtime. They are people who rarely offer an opinion or volunteer to take on work. While some of these people will simply be quiet, shy individuals who enjoy their own company at times, some will be using the solitude they create as a way of dealing with chronic negative affect that they perceive threatens them when they are among the crowd.

At the extreme end of this library of scripts are those for whom sick leave, or inexplicable non-attendance at meetings, is the only effective way for them to avoid the painful negative affect associated with participation in the group.

Attack Self : Sometimes, people respond to an experience of *shame* with scripts that range from self–deprecating humour through to masochistic, self–destructive behaviours. This is the set of scripts Nathanson describes as the Attack Self pole of the compass – where the person attempts to regain control of the situation by at least controlling the self–condemnation.

In schools or group settings these are the individuals who 'play the loser,' and are prepared to be the butt of others' jokes, however lighthearted, to simply be 'in the game' and connected with others. They choose to beat others to the punch and put themselves down first in order to stop others from doing so – and perhaps even elicit a sympathetic response instead.

Avoidance: At the Avoidance pole of the compass is a set of scripts that draws attention away from the cause of the *shame* experience and onto some aspect of the self that is not perceieved to be defective and that restores some status to the individual. We all have numerous opportunities to deny or avoid shame by drawing attention to some aspect of the self that can be a source of pride – be it through enhanced body image, possessions, or achievements attained through risk–taking.

These scripts are evident in the the 'class clown' who draws attention away from any aspect of life that is causing him negative affect. They are also used by the person who builds their reputation or identity around one specific aspect of their life – be it fund raising, musical ability, sporting prowess, academic achievement, job title or some other activity in which they feel competent and in control – to avoid dealing with those aspects that are causing pain. Another common way in which we avoid examining what the spotlight of *shame* has highlighted is the use of alcohol or drugs. Each of these scripts alleviates the negative affect of *shame* by diverting our attention away towards a more competent, positive image of ourselves so as to avoid the painful consequences of *shame* for the self.

Attack Other: At the final pole of the compass is that set of scripts that enable us to feel better by shifting the blame or by making someone else smaller. This set of scripts ranges from seemingly harmless banter and good–natured teasing, through to malicious and hurtful insults and even physical aggression. In each of these scripts the painful experience of shame is lessened through making someone else the target in order to enhance our own status. Even the use of nicknames can represent a mild form of Attack Other script.

Managers and other leaders are best to avoid being drawn into using such nicknames for people, especially those that might be subtle put–downs, or ones whose origins are unknown. By using an established nickname for a person – even one that the person seems not to mind – the manager can be unwittingly "buying into" and perpetuating someone else's Attack Other script. Performance management conversations can trigger an attack other response directed towards the person leading the conversation or towards third parties. "Yes I have occassionally been late, but Jane is always late and you have never confronted her about her performance!"

At the more concerning end of the spectrum, much bullying activity can be attributed to Attack Other scripts. During times of change people are exquisitely tuned to detecting subtle changes in status among their group, and will often defend their position by recourse to Attack Other scripts. It makes them feel more powerful and in control to show that they are "bigger" or "better," or "stronger" or "smarter," than someone else.

Affective resonance and the shame spiral

You will recall that one of the key characteristics of the expression of affect is that it will resonate with others. This is particularly the case with *shame*. Let's consider an example. Imagine that you and I have been close friends for a long time. If something I do or say triggers the

shame affect in you I will probably recognise it in your face before you have had time to move to your preferred compass response. Your attack other response ("What kind of friend says something like that!" for example) will confirm that I have created some impediment for you and that recognition will represent an impediment to my on going interest in maintaining our friendship. Your *shame* will trigger *shame* in me!

Depending on my preference I will move to respond from the compass. Withdrawal might see me attempt to pretend I didn't hear you make the comment and excuse myself to go to the toilet. Attack self would see me agree that only a thoughtless cur would say that to a friend, apologise for the statement and wonder aloud why someone as wonderful as you would waste their time with someone like me. However, should I also prefer attack other as my habitual response I may respond in kind - "If you were any kind of friend you would be grateful for my honesty. Nobody else will tell you how bad you are at that!"

It is now clear that your response has triggered further *shame* in me which represents an impediment to your interest in maintaining our friendship and it is likely that will trigger another compass response in you. This is the start of what Nathanson called a "shame spiral".

We may then trade increasingly strong attack other responses before I may say "Look, I don't want to do this right now…" (an attempt to withdraw) and find a reason to generate some physical distance. If I am successful in doing so, we will both be alone for a period and, reflecting on the exchange, we may both move to attack self responses. "Why do I always mess up my relationships? I don't deserve friends like her…".

Attack self responses feel bad and are hard to escape from (how do you escape from yourself?) so we often move quickly to a different point of the compass. I may decide that alcohol is required to help me avoid feeling this way or perhaps a workout at the gym. If I run into you on the way there your choice to move back to attack other may provoke a similar response in me – "You just can't leave it alone can you!" All the while of course our scripts are drawing on our history of previous situations that are similar and magnifying our affective responses.

This is the way that arguments can start out over something seemingly inconsequential, spiral out of control and evolve to include issues that strike to the core of our ego and self-image. It is how we start making a small comment on taking a wrong turn while on our way to a party to celebrate our relationship and end up arriving under a barrage of "You never loved me and you never support me!"

A More Productive Way of Working with Shame

The four sets of scripts described in the Compass of Shame can become maladaptive because they don't enable or require us to examine and address what the spotlight of shame has highlighted about us or our behaviour. They are common ways we all respond to the experience of shame because acknowledging fault with and addressing some defect of the self is a daunting task. The self is who we are, and it is all we have. The Compass of Shame responses enable us to ignore whatever it is that we would rather not admit is part of our self by denying or by–passing the painful shame emotion. So how do we avoid getting caught up? How can we work more productively with *shame*?

First accept that you cannot avoid triggering *shame* in others nor can you avoid it being triggered in you. It is part of our firmware and it has an important role to play in our well-being. Without it we would not be aware that we had created or experienced some impediment to our interests.

Equally important is to accept that you cannot tell others what they are experiencing. Comments like "Don't walk away from me! Your withdrawal response is hardly helpful in this situation. It was your stupidity that triggered the shame in the first place!" are really only a subtle form of attack other and are likely to make the situation worse rather than better.

Practice becoming conscious of your own responses. At first you may only be able to reflect after the fact and recognise how your scripts caused you to respond. Over time, you might notice which one of the compass responses you seem to favour and the strength of those responses. As your capacity to see your own responses increase you will be able to see them as they begin to arise in you and in others.

When you are able to identify responses to *shame* being triggered you can then move with interest to asking the question what was the impediment that triggered the shame? That is where the beginning of your solution lies by taking responsibility for your contribution.

Put a reminder in your diary a month from today to return and re-read this introduction. Revisit the facial expressions characteristic of each of the affects. While *shame* is regularly triggered in all of us it is rarely alone and is often seen with f*ear, distress* or *disgust*. The fact that I am feeling afraid can be a source of *shame* for me if I have be raised to believe that to show fear is a sign of weakness and is something that should be treated with disgust.

Do what you can to facilitate the attainment of the four elements of the central blueprint in all the relationships in your life. Take active interest in others and find ways to experience and to share joy. Do what you can to assist others to remove sources of *distress* or *fear* (the reduction of negative affect is in itself a source of *joy*) but allow them to be expressed when they do arise. Help make it ok for others to express their affective and emotional states.

Remember that affective resonance means that you will feel some of what those around you are feeling. Recognise that, like the screaming child on an airplane, when others feel bad it will make you feel bad. This is the basis of empathy. Taking action to help relieve their distress will make you both feel better.

Finally, be gentle with yourself. The scripts we all hold have been a lifetime in development – they may take a little while to change.

Further Reading

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