CHAPTER **3**

Emotions, Decision Making and Systems Intelligence

Mikko Dufva

Emotions affect our decision making. They also hold potential that is often unused but could be beneficial to decision making. This potential can be harnessed by viewing emotions and the decision situation as systems. This brings into focus the interplay between feelings and reason. The regulation of emotions is a dialogue between feelings and reason, a dialogue that can be initiated by positivity.

Introduction

Everybody makes decisions. Some can be routine or automatic, such as what to wear and whether to take the bus or car. Deciding on a company's strategy or where to live are bigger issues needing more consideration. The usual course of action is to gather large amounts of data, think of alternatives other than the usual yes/no and then use some sort of heuristic to make a choice. Nobody wants to make a bad decision, so the choice needs to be as good as possible. Often the goodness is decided only when the consequences appear.

The ideal of rational decision making is pervasive in our society. Managers often make decisions based on facts and the "soft" side of things is overlooked. This idea of rationality has been challenged lately by the advancements in neuroscience, which is blurring the line between rational and emotional. According to Damasio (1994), rationality and emotions are intrinsically linked together. Decision making involves subtle processes that depend upon emotion (Naqvi et al. 2006). Wenstøp (2005) builds on this and argues that multi-criteria decision analysis should put more emphasis on emotions to increase rationality in decision making. Furthermore, the theory of Multiple Intelligences (Gardner 1993) has broadened our view of human competencies and intelligence. Emotional Intelligence in particular (for a recent summary see Mayer et al. 2008) stresses the significance of emotions and emotional knowledge in human action.

This chapter will focus on an individual making an important decision. The range of decisions start from deciding whether to buy a new toaster to deciding

which job offer to accept. The essential aspect is that the decision requires some thinking. The focus will be on an individual, although I acknowledge that emotions are dependent on the environment and other people[1]. Rather than providing an extensive presentation of emotions and decision making, I will point out some important aspects of the topic from the point of view of systems intelligence (Hämäläinen and Saarinen 2004).

Emotions Hold Potential

Emotions can be viewed as beneficial or harmful to decision making. Seo and Barrett (2007) describe these two views as "feelings-as-bias-inducer" and "feeling-as-decision-facilitator". The former view holds a phrase "keep a cool head" as its guiding principle, the latter is more about "listening to your heart". These two views assume that emotions and reason are independent of each other, an assumption that is challenged by recent work in psychology, behavioural economics and neuroscience (Sanfey and Cohen 2004).

The "keep a cool head" view focuses on the uncontrollability and unpredictability of emotions. Drawing on a body of research, Seo and Barrett (2007) list several biases that emotions can cause. For example, unpleasant feelings can cause a person to focus on the short-term benefits regardless of the long-term consequences. Emotions also affect what information comes to our mind when making decisions. All this uncertainty leads to emotions being suppressed or ignored when making decisions. The "feelings-as-bias-inducer" view focuses on what people do about their emotions and how emotions shape their behaviour (Seo and Barrett 2007).

Weber and Lindemann (2007) describe "calculation-based decisions", in which a person analyses the potential rewards against the potential costs to herself. This method has produced several helpful tools to aid in the calculations, for example cost-benefit analysis. Damasio (1994) has critiqued this kind of decision making and depicts that the goal in this "high reasoning" is to act according to the theories of Plato, Descartes and Kant and to avoid emotions, a goal that cannot be achieved.

The "listen to your heart view" focuses on the possibilities of emotion. Weber and Lindemann (2007) call this type of decision making, which is governed by our feelings, "affect-based decisions"[2]. George (2000) describes that emotions can be a great source of strength and creativity. They bring new information to mind, help quick organizing and prioritizing and enable engagement. This is especially helpful in situations involving time restrictions and uncertainty. The "feeling-as-decision-facilitator" view focuses on how people experience their feelings (Seo and Barrett 2007). It focuses on the possibilities that emerge from emotions.

Systems intelligence believes that emotions should be taken seriously into account in decision making. Emotions are a part of our competence. Because of their unclear nature compared to fact-based knowledge, we may disregard them

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[1]For example mood contagion (Barsade 2002) is an important aspect in group processes.

[2]Weber and Lindemann (2007) also describe a third kind of decision making, "recognition-and-rule-based decision", which are governed by implicit or explicit rules.

as interference to our otherwise well-oiled decision making mechanism. However, emotions are useful interference and despite their fuzziness can guide our action fruitfully.

Emotions may seem to disrupt the rational thinking process. But emotions can actually bring a more holistic and farther reaching view of the situation. Maija Vanhatalo (2007, p. 149) discusses this by describing behaviour in the ultimatum game reported in the literature she studied. Based on work by Mellers (2001) she writes that emotions bring a long term gain to mind and that "our emotions and social intelligence are actually more efficient than we would think".

According to an experiment known as the "Iowa gambling task" carried out by Antonio Damasio and his colleagues (Damasio et al. 1997) people can feel an advantageous strategy before being aware of it.[3] Without any prior knowledge the participants of a gambling experiment soon started to play profitably. However, when asked; they could not say what was going on or what kind of patterns there were in the game until significantly later in the game. Their body was telling them to avoid certain decks of cards by stress mechanisms such as sweaty palms. Drawing from this experiment it is possible that people can "feel" the system before understanding it or before being able to rationally describe it. And not just feel the right alternative, but also to act according to the feeling – without realizing it. This sort of "human intelligent action" is what systems intelligence wants to highlight:

> To know about a system is critical in many cases. But in actual conduct of life it is often even more fundamental to sense *the feeling of a system*. (Hämäläinen and Saarinen, forthcoming)

Malcom Gladwell's book Blink (2005) describes several other examples, where an expert makes an accurate judgement in the blink of an eye by simply listening to her feelings. For example, an expert can tell if a statue is original or fake at a glance, basing her judgement on "because it feels that way". This is often described as intuition.[4] An expert has come to trust her feelings in a familiar system. She is open to her feelings, knows what they signal and is able to act accordingly – she is acting systems intelligently.[5]

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[3] Maia and McClelland (2004) have repeated the experiment using a more sensitive questionnaire and argue that people in fact have conscious knowledge of the advantageous strategy. This shows that it is possible to have conscious knowledge, but not be able to put it in words, when the question is broad, as was in the original Iowa gambling task.

[4] According to Dane and Pratt (2007, p. 36) intuition is "a (1) nonconscious process (2) involving holistic associations (3) that are produced rapidly (4) which result in affectively charged judgments." Intuition can help us form a quick understanding of the problem, the accuracy of which depends on our understanding of the problem domain. Our emotions play a notable role in intuition, affecting both the process and the end result (Dane and Pratt 2007).

[5] Another view to our hidden potential is that of bounded rationality (Simon 1957). Bounded rationality is not about optimizing our benefit and not about irrational decision making, but rather about taking into account the specific characters of the occurring situation and using heuristics fitted to the context (Selten 2001). Emotions inform us about the specifics of the situation and can shape our heuristics accordingly (Fessler 2001). They are thus a key part both in acquiring information about our surroundings or situation and also in choosing a favorable action.
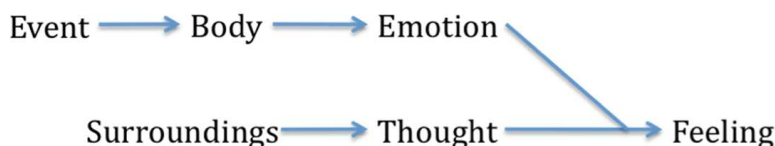
Figure 3.1: Emotions and feelings.

Systems intelligence wants to highlight the whole human potential, not just the rational dimension in us. In doing so, the perspective combines Senge's ideas of systems thinking with what he calls personal mastery (Senge 1990). While the former seems largely a cognitive construct, the latter takes into account human feelings and sensibilities as receptors of signals from the surrounding system.

The key to accessing our hidden potential is to be open to emotions and different possibilities. Scharmer (2007, p. 9) lists seven leadership capacities, including "holding the space", which means listening to oneself and "what life calls one to do", and "observing", which means "suspending the voice of judgement" and observing "with an open mind". Some restrictions are only caused by our mental models to which we cling onto tightly. Being open to the possibilities invariably around us is the first step towards embracing a more whole approach to decision making and to life itself.

Emotions Form a System

In everyday conversation the words emotion, feeling and mood are used rather ambiguously. Emotion is described as the body's response to some event or personal meaning and feeling is the experience of emotion attached to some cognitive situation (Damasio 1994). We see or think of something, which leads us to have an emotion and combined with our thought at that moment leads to a feeling. For example If we are on a way to meet a dear friend and see a smile in someone's face leading us to have the emotion of joy we may feel happy, because we were thinking about the exciting meeting about to happen. A simple diagram is presented in Figure 3.1. Emotions and feelings are not independent objects, but are connected to us, our surroundings, our thoughts and other emotions and feelings.

Although emotions are interconnected, different emotions have been recognized. The discrete emotion approach talks about basic emotions such as joy, love, anger, fear, sadness, disgust and surprise (Barsade and Gibson 2007, p. 37). According to Fredrickson (2001, p. 219) these are often linked to specific action tendencies. We feel an emotion and it makes us act in a certain way. For example, we feel fear when meeting a growling, big bear and have the urge to flee and we feel disgust when discovering rotten berries and we avoid them. This sort of automaticity has been evolutionarily important to us and has probably saved our species from extinction. However, viewing emotion as automatically leading to action is too simplistic a view of the emotion as a system.
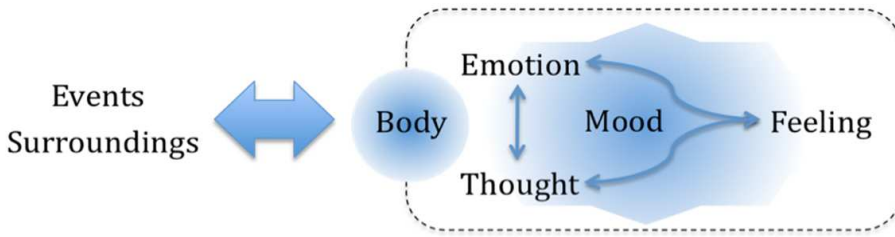
Figure 3.2: Emotion as a system.

Damasio (1994) distinguishes primary emotion from secondary emotion. Primary emotion is the above-mentioned automatic response to different features such as the size of an object, sound and motion – the basic emotions linked to specific action tendencies. Secondary emotion builds on the primary emotions. It is a learned response to a certain situation and requires that we are able to separate the current situation from the experienced emotion. Primary and secondary emotions are thus interdependent.

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One important thing missing from our emotion as a system is mood. Mood is less intense and clear than emotion and usually lasts longer (Barsade and Gibson 2007). Moods are the general tone of feeling good or bad. Damasio (1994) uses the term "background feeling" to describe feelings that are not dependent on emotions, but rather are the sense of existing. Moods can be understood as the general feel of the system. Figure 3.2 depicts one interpretation of the overall emotion as a system.

Understanding the emotional system can be described as "emotional knowledge" (George 2000) or "emotional understanding" (Salovey et al. 2002). Achieving this emotional understanding may seem to be difficult. It is hard if not impossible to draw an accurate picture of our emotion as a system or describe it in words. As Stern (2004 p. 112) writes: "Because the present moment is mentally grasped as it is still unfolding, knowing about it cannot be verbal, symbolic and explicit". The key is that objectively describing the system is not necessary for successful action, but being aware of it is crucial: "awareness of emotions is necessary for their management." (George 2000, p. 1038).

Scharmer (2007, p. 9) speaks about sensing and connecting with ones heart, meaning "open" knowing which "is gained by means of interconnected wholes". Things are interconnected and we cannot step away from our emotions and feelings. We are part of our emotion as a system, part of which is hidden. Systems intelligence acknowledges that emotions create a system that connects with the system of the situation. As Siitonen and Hämäläinen (2004) write:

> Systems intelligence appears in (1) understanding that both the visible and invisible structures guide the participants' behaviour, and (2)

in using this observation to create processes, which produce systems intelligent thinking and behaviour.

Just being aware of feeling "bad" or "good" does not help very much. It is necessary to identify emotions, to know the difference between e.g. being excited and happy. Seo and Barrett (2007) use the term "emotion differentiation" to stress the ability to distinguish and describe specific feelings. This does not mean being able to express feelings objectively. Rather this "emotional perception and expression" (Salovey et al. 2000) is about being able to recognize information from the emotion as a system.

Systems intelligence believes that these kind of abilities are present in each one of us and they arise from "an intuitive, instinctual and sense-like grasp of what we believe is the system" (Hämäläinen and Saarinen 2007, p. 9). We may have lost the connection to our feelings and may feel that we are not able to differentiate between feelings, because we have never had to use that skill. Systems intelligence believes that the link to our feelings is there, even if we have ignored it for a long time. Once we begin to approach the decision more wholly we may begin to act from the emerging whole. Scharmer (2007 p. 9) calls this capacity "presencing". As Hämäläinen and Saarinen (forthcoming, p. 3) write:

> In the systems dimension, humans have remarkable abilities to learn and improve even in the absence of explicit objective knowledge. As systems creatures with great survival and success skills, people are more improvers than truth seekers.

Emotion as a System Connects to the Decision Making System

Emotion as a system is part of a larger decision making system, which also includes the decision maker. Decision making becomes dynamic because it shapes the state of the system. The decisions we make today have an effect on the possibilities we have tomorrow. It is important to know the system and be aware that it is constantly changing.

Sterman and Sweeney (2007) argue that people, including those who have extensive training in mathematics and science, have a poor understanding of dynamic feedbacks, delays and other systemic phenomena. Yet, from the systems intelligence view, we have been and continue to be able to act successfully in complex dynamic systems. Drawing, modeling or depicting the system may be useful in some situations, but in everyday life it may be too troublesome. Describing the system requires us to take one to step out of the system.[6]

We do not always need to describe the system to be able to act from within it. This "withness-thinking" (Shotter 2006) enables one to tune into the system and have a sense of the direction in which the system is going. Systems intelligence believes that humans have the ability to get a hold of environments with uncertainty and dynamic feedbacks. As Leppänen et al. (2007, p. 5) write:

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[6]Shotter (2006) calls this "aboutness-thinking".

> Systems intelligence argues that a human agent experiences her inter-
> dependence of the environment in a way that is intelligent by definition,
> and with this intelligence, the agent is able to act productively.

Mayer et al. (2008, p. 527) define emotional intelligence as "the ability to carry
out accurate reasoning focused on emotions and the ability to use emotion and
emotional knowledge to enhance thought." This can also be called emotional
sensitivity. Systems intelligence wants to go beyond emotional sensitivity to
systems sensitivity. Rational thinking is connected to emotions and to drive the
system intelligently a certain sensitivity for it is needed.

The emotion as a system is complex in itself and the whole decision situation
can seem overwhelming. If everything is interconnected and emotions also have
negative effects on decisions, some kind of systems intelligent management of
emotions is called for. A Systems Intelligent person views herself as part of a
decision system she cannot fully describe, but from which she must act. As
Hämäläinen and Saarinen (2007, p. 50) write:

> Systems intelligent leader . . . operates within the visible system and
> manages the emotional system simultaneously.

Regulation is Dialogue

It is time for action. To be able to drive the emotional system, regulation is
needed.[7] This regulation of emotions is the core of systems intelligent action in
decision making. It is not the same thing as suppressing or ignoring them. Shutting
our emotions off is not possible and ignoring them narrows our understanding
of our mental models. We are able to see our mental models more clearly from
looking at our emotions than from looking at our logic. Rantanen (2007) analysed
the Enron case and argues the importance of reflection and the dangers of ignoring
and suppressing emotions. He suggests that Ken Lay, CEO of Enron, ignored
the feeling of sadness, of letting go, in his divorce thereby creating a pattern that
recurred also in his professional life (Rantanen 2007, p. 174).

Instead of choosing between emotional and rational, we can look beyond such
dualism. Feelings and reason should be thought of as being part of a dialogue.
Once we are aware that emotions hold potential and form a system connecting to
the situation as a system, it is natural to embrace the interconnection between
the emotional system and our rational thinking.

Fogel (2007) uses a term "co-regulation" to describe the communication system
between e.g. a mother and an infant. I will borrow the term to shed light on
the dialogue between emotional and rational. Fogel (2007, pp. 251–252) describes
coregulation as

> a form of coordinated action between participants that involves a
> continuous mutual adjustment of actions and intentions. During co-

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[7]Seo and Barrett (2007) describe this regulation of current feelings as "affective influence
regulation".

> regulation, the communication system acts as a single entity such that action cannot be parsed into "individual" and discrete contributions.

It is possible to view the interplay between our reason and feelings during a decision situation as continuous and something that cannot be stripped down to its parts or discrete contributions. Instead of thinking that reason produced this part of the consideration and feeling this part, the whole process leading to a decision emanates from one communication system. It is as though we could simultaneously move the two banks of the decision stream, emotional and rational, to guide the process.

Leppänen et al. (2007) use the terms "objective control paradigm" and "subjective action paradigm" to describe the two intellectual paradigms systems intelligence wants to connect. Both rational reasoning and embracing of emotions are needed and they even complement each other producing together something more than the sum of its parts.[8] This interplay of emotions and reasoning, as well as the situation and ourselves can be imagined as a system. Contrary to more traditional methods of systems thinking, the focus is on action, not in describing. Because we are a part of the system, we cannot unfold it, but we can act in it and even change it.

Positivity Opens the Dialogue

The dialogue between emotions and rational thinking can best be initiated by positive emotions. "Co-regulation" requires trust, which is usually more available in a positive atmosphere. Without trust the dialogue will easily become a monologue, regulation from above, a dictatorship of either reason or emotion.

The broaden-and-build theory of positive emotions states that positive emotions can "broaden people's momentary thought-action repertoires and build their enduring personal resources" (Fredrickson 2001, p. 219). Negative emotions narrow our thinking and acting by creating the urge to act immediately, e.g. flee in fear or attack in anger.[9] This has been useful in the past, when survival was an essential concern. On the other hand, positive emotions broaden our thinking and acting, e.g. joy encourages us to play and be creative, interest makes us explore and contentment tells us to savor and maintain the present (Fredrickson 2001). Positivity can shape the emotion as a system to produce not just better decisions but also a better life. Decision making is not just about choosing the right alternative. It is about learning about the system and changing it and ourselves with it.

If negativity has kept us alive in the short term, in situations with immediate danger, positivity has made us flourish. It is something each of us possesses. As George (2000, p. 1038) concludes: "Research has found that people strive to maintain positive moods and alleviate negative moods". Our natural tendency

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[8]Seo and Barrett (2007) suggest that it is possible to take the benefits of "affective reactivity" and use "affective influence regulation" to get rid of the negative effects, if "emotion differentation" is used.

[9]Baumeister et al. (2007) critique this kind of direct causation theory of emotions. They see emotions rather as guiding and providing feedback.

is to be in a positive mood, making us more open to exploration, creativity and holding on to good. Systems intelligent decision making focuses on the good use of positive emotions.

Losada (2004) has studied the effect of the ratios of positivity vs. negativity, inquiry vs. advocacy and others vs. self on the performance of management teams. In high performing teams there is more positivity than negativity and the same amount of inquiry and advocacy as well as a balance between self and others. One way to interpret this is that high performing teams are more positive towards the ideas presented and are able to accept new possibilities, also those that never had occurred to them before. They are ready to challenge their system and bring something new into it. Positivity opens the dialogue between the team members and also between feelings and reasoning.

Conclusion

Our emotions offer us insight into a decision. Naturally, we also benefit from knowing the facts. The facts and emotions can seem to be in conflict pulling the decision in separate directions. The temptation to only listen to reason or feeling is strong, causing us to suppress our emotions or to act impulsively.

When thinking of the decision making situation as a system also including the decision maker, the conflict changes into interaction. Different perspectives are opened to the problem at the same time. We feel and think simultaneously. It is like touching and looking at an object – we get a more complete picture of it if we both touch and look at the object than if we suppress looking by closing our eyes and depend only on our touch.

The co-management of both emotion and reason is needed. Because, in working life, we are used to making our reasoning transparent, the management of emotions is usually in focus. But systems intelligence in decision making is actually about regulating both by creating a dialogue between them. It is about coregulation, not dictatorship. If an object looks heavy but feels light, as some plastic stones do for example, we have to combine the conflicting information. This leads us to something new, if we are open to it.

Positive emotions make us more open to possibilities. In decision making this can undo a gridlock situation by presenting a new direction. Even more than helping decision making, positivity also makes our life better.

Emotions, feelings, body, thought, surroundings – are all linked to each other. The borderlines can be blurry and all the interconnectedness can make us feel lost. Fortunately, nobody is asking us to draw a picture of the system of our decision. What is required is action. And systems intelligence believes that people have been and are able to act successfully in complex situations.

Neuroscientists have discovered how our rational thought and emotions are intertwined in our brains (Damasio 1994). We could start thinking that emotions in all their strength are not against us if we are not against them.

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