This chapter provides an introduction to emotional intelligence. It attempts to define emotion from different perspectives, and explores possible causes and varieties. Typical characteristics of emotion, such as great intensity, instability, partial perspectives and brevity are outlined next. The evolution of emotion arousal through four primitive phases such as cognition, evaluation, motivation and feeling is briefly introduced. The latter part of the chapter emphasizes the relationship between emotion and rational reasoning. The biological basis of emotion and the cognitive model of its self-regulation are discussed at the end of the chapter.

1.1 What Is Emotional Intelligence?

There exist quite a large number of contemporary theories on emotional intelligence [5], [21], [31]. These theories have been developed from different angles of understanding emotions. Naturally, researchers of different domains attempted to interpret the phenomena of emotions [36], its arousal and control from the point of views of respective subject domains. For example, physiologists co-relate emotions with the changes in the neurological and hormonal activity of the humans, which are caused by the various physiological conditions of the human body, including blood pressure, blood circulation, respiration, body temperature, gastrointestinal activity and many others. Psychologists, on the other hand, consider emotion to have four main evolvable phases, such as cognition, evaluation, motivation and feeling. Philosophers are mainly concerned with the issues of emotion and rationality. The book provides a detailed discussion on emotions from different angles with an ultimate aim to formalize a unified theory of emotional intelligence from a cognitive standpoint.

The true explanation of the causes of emotion-arousals remained a mystery until this date. However, most of the researchers are of the opinion that there is a strong correlation between perceiving significant changes in one’s personal situations and arousal of emotions. According to them, humans compare their current situations with previous situations, and when the level of current stimulation far exceeds the level they have experienced long enough to get accustomed to it,
arousal of emotion takes place. Experimental observations reveal that arousal of common/simple emotions, such as sadness, happiness, disgust, fear, love, hatred and even sexual desire supports the above phenomenon. It may further be added that the principles of comparisons that humans adopt depend on an individual’s own basis of judgement, and therefore is not free from personal bias. It may be noted that the perceived changes in situations, that cause arousal of emotions, need not be always genuine. In fact, humans on occasions consider imaginary situations causing generation of emotions. It is a well-known phenomenon that people sometimes are unnecessarily tensed and afraid of unknown situations.

*Emotional intelligence* (EI) is a new discipline of knowledge. Philosophically, it refers to the *competence to identify and express emotions, understand emotions, assimilate emotions in thought and regulate emotions in the self and in others* [19]. Apparently, the definition follows from our commonsense understanding about emotions. The word *competence* in the present context, perhaps, indicates the degree or relative power of judgment of persons to recognize/understand emotions. The power of representing emotions in thoughts, according to the definition, also is a measure of EI. Control/regulation of emotion too is considered as a measure to qualify the term *competence* in this context. There exists a vast literature on EI [5], [14], [20], [21], [27], [34] considering one or more aspects of the above emotional attributes toward intelligence. Most of the literature considers emotions from philosophical and/or psychological standpoint, and ignores the scope of possible automations to detect and regulate human emotions. The book provides computational models for detection and regulation of human emotions.

The subject of *emotional intelligence, which* was originated in early 1980’s, could draw attention of a limited group of people within academic circles and philosophers. In the last decade, emotional intelligence has earned widespread publicity because of significant progress in experimental psychology. The most promising best-selling title on *Emotional Intelligence* is due to Daniel Goleman [14]. According to Goleman, emotional intelligence was believed to have significant impact on individuals from the point of view of cognitive ability. Naturally, people with a high level of emotional intelligence may not have high *intelligent quotient* (IQ).

Apparently the hybrid term “Emotional Intelligence” seems to be contradictory as it includes emotions, conveying the idea of irrational passion and intelligence, which is characterized by rationality of thoughts. In fact, since the beginning of the era of emotional intelligence, the conflict between emotion and rationality was given much importance, and no legitimate solution to this problem could be traced until the beginning of this decade. Most of the researchers in the last few decades emphasized the importance of intellect at the expense of emotion. This trend, however, is being changed as the experimental research on emotions demonstrated many promising results, citing the need of the emotional component over the intellect component of EI.

Formalization of *emotional intelligence* from the classical definition of emotion and intelligence, though apparent, is hard to conceive. Traditionally, researchers in